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**I. PURPOSE**

This policy is designed to create a safe instructional environment and minimize exposure to health and safety related hazards for all personnel engaged with Live Fire Suppression Training. This policy meets the National Fire Protection Association (NFPA 1403), Standard on Live Fire Training Evolutions, 2012 edition.

**II. SCOPE**

This document details the procedures in setting up, preparing and running live fire training evolution(s) in which a student receives training. This includes any state accredited course that provides the students with a safe review on both interior and exterior operations and the opportunity to apply techniques used by firefighters in an actual (live) fire-training environment.

A. This policy applies to all training utilizing live fire suppression training at the MAAC Burn Building.

1. Fixed Facility Training Structure: A structure built of conventional building materials; or structures built of containers specifically designated for conducting live fire training evolutions (Class A) on a repetitive basis.

2. Live fire conditions include the use of smoke drills utilizing live fire to produce heat/smoke within fixed facility structures. This does not include artificially generated smoke machines.

**III. PERSONNEL QUALIFICATIONS AND RESPONSIBILITIES**

A. The qualifications and responsibilities for personnel conducting the training evolution(s) are listed below. These qualifications were designed to insure that individuals with the appropriate training and experience are in charge of the training / drill ground.

B. If live fire is being used as part of the Interior firefighting courses, ALL Instructors of record must be approved by the MAAC. Only Instructors approved by the MAAC will direct and supervise the students involved in the live fire activities.

C. Have completed a recognized course for NFPA 1403 dealing with Fixed Facility Structures and Exterior Live Fire Training Props along with an orientation to the MAAC’s

D. All instructors shall participate in assignment rotations, rest and rehabilitation.

**E. Instructor in Charge shall:**

1. Be an accredited Instructor approved as the Instructor In charge by the MAAC to conduct live fire training. Understand and implement the requirements of the Instructor in Charge as outlined in NFPA 1403.

2. Be responsible for insuring a productive, safe learning environment under both realistic and controlled circumstances during live fire evolutions, and for full compliance with these guidelines. He/she shall also be responsible to ensure that selected Assistant Instructors meet the requirements as outlined in this Section and shall utilize a nationally recognized Incident Command System (ICS).

3. Be responsible for making the decision to ignite the training fire in coordination with the Safety Officer.

4. Ensure all instructors takes a personal accountability report (PAR) when entering and exiting during an actual attack evolution and all students are assigned, monitored and supervised during live fire training evolutions.

5. Provide for rest and rehabilitation of all participants of the training session, which includes any medical evaluation, treatment, fluid replenishment and relief from climatic conditions.

**F. Instructors shall:**

1. Be an accredited Instructor approved as an Assistant Instructor by the MAAC to conduct live fire training. Understand and implement the requirements of an Instructor as outlined in NFPA 1403.

2. Chosen by the Lead Instructor, subject to the approval of the MAAC Academy Director.

3. Responsible to rotate through duty assignments and perform all functions assigned to him/her by the Lead Instructor that include:

a. Include one instructor to each functional crew; i.e.: attack, backup, search, each of which shall not exceed five students.

b. Ensure all required protective clothing and all participants are wearing equipment appropriately

c. Monitor and supervise all assigned students during live fire training evolutions and perform a personal accountability report (PAR) when entering and exiting a structure.

d. Make sure that at no time any individual is unsupervised in the burn room area.

**G. Safety Officer(s) shall be:**

1. An accredited Instructor approved as the Safety Officer by the MAAC to conduct live fire training. Understand and implement the requirements of the Safety Officer as outlined in NFPA 1403.

2. Responsible to ensure that the Lead Instructor has complied with all requirements of this policy.

3. Accountable to the MAAC Academy Director and the Instructor In Charge for exercising his/her authority to intervene in any aspect of an evolution to stop a potential accident or dangerous situation whenever an unsafe situation arises.

4. Observe and record all unsafe acts, and/or conditions on the drill ground including if the conditions are:

a. Minor in nature, he/she shall inform the Lead Instructor to correct them.

b. Serious in nature, he/she may use their discretionary power to stop a drill from continuing, with proper notification to the Lead Instructor.

5. Responsible for an inspection of the structure to ensure that no unauthorized persons, animals or objects are in the building immediately prior to ignition

6. Vigilant that at no time any individual is unsupervised in the burn room area.

7. Responsible to provide for the safety of all persons on the scene (including instructors, students, and bystanders) from incidents likely to cause personal injury, and/or equipment damage.

8. Verifies instructor personal accountability report (PAR) when entering and exiting during an actual live fire attack evolution.

9. Ensure all participants participate in Decon at the end of the training period.

9. Monitoring the weather for a potential menace. If it does, he/she will have the authority to cancel or postpone the drill.

**H. Ignition Officer shall be:**

1. Be an accredited Instructor approved as the Ignition Officer by the MAAC to conduct live fire training. Understand and implement the requirements of the Ignition Officer as outlined in NFPA 1403.

2. Present on a minimum two person Fire Control Team to ignite all initial fires on any level of the structure.

a. One member of the Fire Control Team (not a student or safety officer) shall assist to ignite, maintain and control the type and amount of materials being burned and adding all materials to the fire sets.

b. The other member shall be in the area to observe the other team member, recognize report, and respond to any adverse conditions.

4. In full protective clothing, including self-contained breathing apparatus (SCBA) when performing this control function.

5. Have access to a charged hose line when the Fire Control Team is igniting or tending to any fire.

6. In direct communication with the Safety Officer and under the coordination of the Instructor In Charge in order to ignite initial fires.

7. Assignment rotations, rest and rehabilitation of Fire Control Teams shall be provided to prevent overheating, thermal saturation, dehydration and fatigue.

**I. Rapid Intervention Team (RIT) Officer (If Assigned) shall be:**

1. An accredited or department designated Officer or senior Firefighter.

2. In charge of a team of two or more individuals, with the purpose of acting as a dedicated RIT team for the purpose of the training scenario or department requirements.

3. Students MAY be utilized for RIT Team function if outlined as part of the training scenario and an Instructor is assigned to the RIT Team.

4. Duties and minimum equipment for RIT shall be defined by the Instructor In Charge.

**J. Support Personnel (If Assigned) shall:**

1. Include but not be limited to, apparatus operators, rehab, and EMS standby.

2. They shall not be a student unless deemed competent to fulfill the assigned role.

3. Trained and competent in their duties as assigned.

4. Wear PPE appropriate for their duties.

**IV. PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT**

A. Personal Protective Clothing - Prior to participating in any activity, Instructors will inspect and document all (student, instructors, safety officers, fire control team,) clothing used for live fire training/classes to determine if the gear is in a serviceable and safe condition.

B. Any gear that is contaminated, defective or damaged shall not be permitted for structural or live fire training.

C. Each participant shall be equipped with full Personal Protective Clothing (PPC) which shall meet the requirements of NFPA 1971, Standard on Protective Ensemble for Structural Fire Fighting, (when purchased), to include:

1. Turnout coat and protective trousers,

2. Firefighting boots,

3. Firefighting gloves,

4. Protective hood

5. Helmet

6. Eye Protection

D. Personal Protective Equipment (PPE) includes all PPC and Self-Contained Breathing Apparatus (SCBA) that meet the requirements of NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services and personal alert safety systems that meet the requirement of NFPA 1982, Standard on Personal Alert Safety Systems (PASS) (when purchased).

E. All participants shall be inspected by the Safety Officer and Instructors prior to entry into any live fire training evolution to ensure that the protective clothing, SCBA, and a personal alert safety system (PASS) device are being properly worn and are in serviceable condition.

F. All students, instructors, safety personnel and other personnel shall properly wear the protective clothing and equipment necessary whenever they are involved in an evolution and breathe from an SCBA air supply whenever one or more of the following conditions exist:

1. Operating in an atmosphere that either is suspected, may become or is oxygen deficient, or may become, suspected or is contaminated by products of combustion, or both.

G. All personnel using SCBA must be in accordance with the OSHA facial hair standard [OSHA 1910.134(g)(1)(i)] to be allowed to participate in any live fire training.

H. A method of communications shall be established to enable two-way communications between all of the instructional staff, the interior and exterior activities and external requests for assistance.

**V. EMERGENCY MEDICAL SERVICES (EMS)**

A. The minimum requirement for emergency medical services is for Life Support (BLS) to be available on site to handle illnesses or injuries. Nothing in this document prevents a Department from exceeding the minimum BLS requirement and establishing an Advance Life Support (ALS) capability.

B. BLS/ALS functions shall be located with Rehab, and all personnel involved in the training must be aware of its location.

C. Once the need for BLS/ALS is identified during the training scenario the Instructor in Charge will evaluate the need to immediately suspend training. If training is suspended the fire will be extinguished by the most expedient method.

D. Medical Monitoring/Rehab will be established with all live fire evolutions and the BLS/ALS personnel who will:

1. Determine base line vitals for all personnel/instructors participating in live fire evolutions.

2. Monitor the mental capacity, vital signs, and general well-being of all students and instructors as they report to rehab.

3. Provide hydration, nourishment and supplemental interventions for recovery. Water is the fluid of choice for re-hydration.

4. Decide when students and instructors may return to duty.

5. Notify the Safety Officer when a patient needs transported.

6. Ensure medical equipment is readily available to treat injured personnel.

**VI. HOSE LINE AND WATER SUPPLY REQUIREMENTS**

A. Attack Lines are those hose lines used to actively suppress fire.

B. Backup Lines shall be provided to ensure protection for personnel on training attack lines.

1. The number and size of attack and backup lines used is at the discretion of the Lead Instructor and Safety Officer.

2. All attack or back-up line(s) will be capable of delivering a minimum of 95 gpm each.

3. There shall be one instructor with each hose line being actively used inside a structure during the training, regardless of the number of students.

C. There shall be room provided around all props so that there is space for all attack line(s) as well as backup line(s) to operate freely.

D. RIT Line is always charged and available for the RIT Team (When incorporated in the scenario).

1. RIT line is staged outside the structure or burn area, but at the ready in case of emergency and only used if there is a perceived or planned emergency in the structure.

2. The line shall be a length adequate to access and attack a fire anywhere in the structure or intended burn area.

E. Water Supply:

1. The water supply for a live fire training evolution shall be reviewed and assessed by the Instructor in charge and the Safety Officer based on the extent of the scenario and the evolutions, size and type of structure and contents to be involved, method of attack to be employed, protection of exposures, and reserves for potential unexpected problems.

2. The minimum water supply and delivery rates for the live fire training evolutions shall meet the criteria established in NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting.

3. Separate water sources shall be utilized for the attack lines and backup (safety) lines to preclude the loss of both water sources at the same time. This may be a second pumper either using its water tank as a source, a draft from a natural water source or a hydrant from a different supply source.

a. Exception: A single source shall be sufficient at a training center facility where the water system has been engineered to provide adequate volume for the evolutions conducted.

**VII. FUEL MATERIALS**

A. Fixed facility structural live fire training evolution:

1. No flammable/combustible liquids shall be used during any live fire training evolutions in these structures.

2. Only Class “A” materials will be used during structural live fire training evolution. Pressure treated wood, rubber, plastic, polyurethane foam, upholstered furniture and chemically treated or pesticide-treated straw or hay shall not be used. No change to the fuel materials is allowed.

3. The fuels that are utilized in live five training evolutions shall have known burning characteristics of such a nature to be controllable as possible. Acceptable fuels include:

a. Pine excelsior

b. Wooden pallets

c. Straw or hay

d. Natural wood-based products

4. Fuel materials shall be used only in the amounts necessary to create the desired fire size. Fires will not be of a size that is uncontrollable as to limit conditions that could cause uncontrolled flashover or backdraft.

a. The quantities of materials to be used will be reviewed with the instructional staff prior to the start of the drill to ensure the quantities match the scenario and that the fuel load is not exceeded.

b. No more than four (3 or 4) pallets of average size or comparable amount of Class A materials shall be used per fire. See the Burn Sequence Matrix Chart for details.

5. The Burn Sequence Matrix Chart outlined in this section specifies each burn area that includes the maximum fuel loading per evolution and the maximum number of sequential live fire evolutions that can be conducted per day in each burn room before the room is allowed to cool.

|  |
| --- |
| **Burn Sequence Matrix Chart** |
| **Burn Area\*** | **Max Fuel Load** | **Number of Sequential Burns** | **Cooling Time** |
| 1st Floor South | 75 lb. (3 Pallets)3/4 Bale | 2 | 30 Minutes |
| 1st Floor North | 100 lb. (4 Pallets)1 Bale | 2 | 30 Minutes |
| 2nd Floor South | 100 lb. (4 Pallets)1 Bale | 2 | 30 Minutes |

**\*Note:** Burn Area are inside the Stainless Steel wall areas only. Burning is not allowed outside these areas.

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

7. No change to the Max Fuel Load is allowed at any time.

B. Propane can only be used in the live fire training structure under the following conditions.

1. A single propane tank (not to exceed 20lbs.) can be used in the building by the Ignition Officer to ignite the Fuel Load.

2. The propane tank shall be removed from the building once the fire has been ignited.

**VIII. PRE-BURN PLAN BREIFING**

A. A pre-burn plan shall be prepared, indicating all features of the training areas and reviewed during briefing sessions.

1. A series of approved scenarios have been created to support consistent use of the facility under controlled conditions and their use is encouraged.

B. Instructor’s and Student’s Briefing will be held prior to the live fire evolutions and all assignments and Rotation Matrices for all participants will be provided, reviewed and discussed.

C. All instructors and students will complete a walkthrough of the structure to confirm they understand the expected procedures to be performed during the evolutions and to be familiar with the layout, location of the exits and safety lines.

D. An operations area (hazard) perimeter will be established in the immediate area around the structure. No civilians or any other persons not members of the class, wearing appropriate protective clothing will be allowed to enter the operations area.

E. Establish a recognized emergency "evacuation" signal that is understood by all participants and a pre-determined location for a PAR check/roll call in the event an evacuation of the structure is signaled.

1. A Handheld Air Horn is the minimum required evacuation signal.

**IX. SMOKE PRODUCED BY LIVE FIRE**

A. Training Props adjacent to the Burn Building / Area that are in use by another group that could be affected by smoke from the live fire training evolutions shall be identified and the persons in charge will be consulted to ensure the impact is understood and any potential exposures are avoided.

**X. DURING ALL LIVE FIRE EVOLUTIONS**

A. No person(s) shall play the role of a victim inside the structure during a live fire training evolution. Manikins can be used to simulate victim(s) and the location of the manikin shall not be required to be disclosed, provided that the possibility of victims is discussed in the pre-burn briefing.

B. A Personnel Accountability Report (PAR) shall be established for all participants (instructors and students) which will allow the lead instructor or other staff to, at any given point during the evolution, determine the name and approximate location (i.e. interior, exterior, Rehab, etc.) of each participant.

1. A PAR shall be established prior to entry through assignment of personnel and positions.

2. A PAR shall be announced upon exiting the building for each Team assigned a specific task inside the building after each scenario.

**XI. WEATHER**

A. The lead instructor will gather the weather forecast in advance for inclusion in the briefings with all personnel.

B. The lead instructor will continually monitor weather conditions for any extreme weather changes that may result in additional stressors (i.e. changes in humidity levels, temperatures. etc.) or other conditions (high wind, lighting, etc.) that may cause bodily harm.

C. The training session shall be curtailed, postponed or cancelled, as necessary to reduce the risk of injury or illness caused by extreme weather conditions.

**XII. MEDICAL MONITORING/REHABILITATION:**

A. Brief all instructors and students on the signs and symptoms of heat or cold related disorders and monitor students and instructors for related disorders.

B. In the event that a student exhibits signs of a heat or cold related disorder, the instructor will direct the student to EMS. In the event that an instructor exhibits signs of a heat cold related disorder, the Lead Instructor and/or designee in consultation with the Safety Officer shall direct the instructor to EMS for evaluation.

C. A refusal of any participant to report to EMS for evaluation can result in immediate removal from the program.

D. Encourage all participants to report any signs and symptoms that affect not only them but also anyone who is involved in the live fire training exercise.

**XIII. POST TRAINING ACTIVITIES**

A. The lead instructor will insure that incident reports are completed for all individuals that exhibited signs or symptoms of heat or cold disorders.

B. Conduct a post incident review with instructors/students. This review should include:

1. The need to continue hydrating.

2. Any injuries or illness among the group.

3. Any equipment issues or concerns.

4. Evaluate the group’s performance.

5. Reinforce the training that was covered.

6. Any improvements or suggestions.

7. Complete & turn In all required paperwork.

**XIV. CONDUCTING A STRUCTURAL BURN/LIVE FIRE IN FIXED FACILITY**

A. The Lead Instructor is responsible to submit to the MAAC the request for live training:

1. Request for Live Fire Smoke Drill (Form on Web Site) must be submitted thirty (30) days before the anticipated training.

2. Once approved the Lead Instructor is responsible to notify all personnel (i.e., Instructors, Safety Officer, Ignition Officer, Students, etc.) of the date, the time and location of where to report.

B. The Lead Instructor is responsible to ensure the facility has all necessary equipment needed according to the objectives for the burn (i.e. hand tools, SCBA, fire apparatus, etc.).

C. There will be one instructor for each five students actively participating in the training. Students on break or in rehab do not need to have an instructor assigned to them.

**XV. Waivers and Certification**

A. Prior to participation the Instructor In charge shall ensure that all participants have completed the following waivers.

1. Participant Agreement & Waiver (See MAAC Web Page)

2. Certification for MAAC Live burn Training Program (Appendix A)

B. Any participant not completing the Waiver or Certification shall not be allowed to participate in any training activities.

C. It will be at the discretion of the Instructor In charge to allow the person not having a completed Waiver or Certification to remain as an observer only or to leave the training site. If allowed to stay as an observer the person must remain outside the operational area as designated by the Instructor in Charge.

**XVI. Enforcement**

A. Failure to adhere to any or all of this policy may result in suspension or revocation of Instructor privileges at the MAAC and referral for further action to the District 1 Training Council and/or members department Fire Chief for further action.

**Appendix A:**

**Certification for MAAC Live Burn Training Program MAAC Foundation Inc.**

**THIS CERTIFICATION MUST BE SIGNED BY THE PARTICIPANT AND HIS OR HER CHIEF OR**

**TRAINING OFFICER**

**1) FITNESS REQUIREMENTS**

All participants in the hands-on training conducted at the MAAC Live Fire Training Program must meet the minimum fitness standards of their fire department. The chief officer signature below attests the firefighter meets the medical requirements of NFPA 1582 Standard for Comprehensive Occupational Medical Program for Fire Departments, as interpreted and enforced by the fire department.

**2) PREREQUISITE TRAINING REQUIREMENTS**

All participants in the hands-on training conducted at the MAAC Live Fire Training Program must meet a minimum standard of training. Participants must meet the qualifications of the National Fire Protection Association, Standard 1001 – Fire Fighter Professional Qualifications. The chief officer signature below attests the firefighter meets the job performance requirements for Fire Fighter I in NFPA 1001, Standard for Fire Fighter Professional Qualifications.

(1) Safety

(2) Fire behavior

(3) Portable extinguishers

(4) Personal protective equipment

(5) Ladders

(6) Fire hose, appliances, and streams

(7) Overhaul

(8) Water supply

(9) Ventilation

(10) Forcible entry

(11) Building Construction

**3) COMPLIANCE WITH NFPA 1500 STANDARDS**

All participants participating in hands-on training conducted at the MAAC Live Fire Training Program must be equipped with appropriate personal protective equipment (PPE) and self-contained breathing apparatus (SCBA). The officer signature below attests the PPE & SCBA meets the applicable NFPA standard.

All participants are required to be in compliance with the NFPA 1500 Standards on facial hair.

By signing below, the participant and the Chief of his/her Department represent and warrant that the participant and his/her equipment meet the NFPA Standards as referenced above.

**Chief or Training Officer:**

Name (Print) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Participant:**

Name (Print) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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