



Live Fire Burn Plan

*District 4 Fixed Facility
Lafayette Red Tower*



LOCATION: 2750 S 500 E
CITY, STATE: LAFAYETTE, IN
AHJ:
DATE OF LIVE BURN:
INSTRUCTOR IN CHARGE (IIC):
SAFETY OFFICER:
PLAN WRITTEN BY:

Attached documents:

- | | |
|--|---|
| <input type="checkbox"/> Cover Sheet | <input type="checkbox"/> Student Roster |
| <input type="checkbox"/> Training Objectives | <input type="checkbox"/> Instructor Rotation Matrix |
| <input type="checkbox"/> Water Calculations (<i>Completed</i>) | <input type="checkbox"/> Student Rotation Matrix |
| <input type="checkbox"/> Site Plans | <input type="checkbox"/> Go / No Go |
| <input type="checkbox"/> Elevation Views | <input type="checkbox"/> Safety Plan / Briefing |
| <input type="checkbox"/> Floor Plans | <input type="checkbox"/> Medical Plan |
| <input type="checkbox"/> Communications Plan | <input type="checkbox"/> LFD Training SOP: 600.02 |
| <input type="checkbox"/> Responsibilities of Personnel | <input type="checkbox"/> LFD Indemnity Release & Waiver Form – All Participants |
| <input type="checkbox"/> Instructor & Support Roster | <input type="checkbox"/> Accountability Form – All Participants |

LIVE BURN PERSONEL MINIMUM REQUIREMENTS

Instructor-In-Charge (IIC) (Can also be Incident Commander if Necessary)	1403 Instructor (Contact District Director for Info)
Incident Commander (IC)	Safety Officer
Fire Control Team - Ignition Officer & (1) Additional Instructor	Rapid Intervention Team - Requires (2) Personnel: See <i>Responsibilities for Personnel</i> for Requirements
Ignition Officer	EMS/Rehab Officer
Fire Attack Hose Line - Instructor	Backup Hose Line – Instructor
Driver Operator – Primary Apparatus	Driver Operator – Backup Apparatus

See Responsibilities of Personnel for Further Information

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Training Objectives

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Water Calculations

Minimum Water Supply (Reference NFPA 1142):

4.2 Structures Without Exposure Hazards.

4.2.1* For structures with no exposure hazards, the minimum water supply, in gallons (liters), shall be determined by calculating the total enclosed volume, in cubic feet (cubic meters), of the structure, including any attached structures, dividing by the occupancy hazard classification number as determined from Chapter 5, and multiplying by the construction classification number as determined from Chapter 6 as follows:

$$WS_{\min} = \frac{VS_{\text{tot}}}{OHC}(CC) \quad [4.2.1]$$

where:

WS_{\min} = minimum water supply in gal (For results in L, multiply by 3.785.)

VS_{tot} = total volume of structure in ft³ (If volume is measured in m³, multiply by 35.3.)

OHC = occupancy hazard classification number

CC = construction classification number

4.2.2 The minimum water supply required for any structure without exposure hazards shall not be less than 2000 gal (7600 L).

4.3 Structures with Exposure Hazards.

4.3.1* For structures with unattached structural exposure hazards, the minimum water supply, in gallons (liters), shall be determined by calculating the total enclosed volume, in cubic feet (cubic meters), of the structure, dividing by the occupancy hazard classification number as determined from Chapter 5, multiplying by the construction classification number as determined from Chapter 6, and multiplying by 1.5 as follows:

$$WS_{\min} = \frac{VS_{\text{tot}}}{OHC}(CC) \times 1.5 \quad [4.3.1]$$

where:

WS_{\min} = minimum water supply in gal (For results in L, multiply by 3.785.)

VS_{tot} = total volume of structure in ft³ (If volume is measured in m³, multiply by 35.3.)

OHC = occupancy hazard classification number

CC = construction classification number

4.3.2 The minimum water supply required for a structure with exposure hazards shall not be less than 3000 gal (11,355 L).

Table 6.2.1 Construction Classification Number

Construction Type	Classification Number
Type I (442 or 332)	0.5
Type II (222, 111, or 000)	0.75
Type III (211 or 200)	1.0
Type IV (2HH)	0.75
Type V (111 or 000)	1.5

5.2.5 Occupancy Hazard Classification Number 7.

5.2.5.1 Occupancy hazard classification number 7 shall be used for light hazard occupancies, in which the quantity or combustibility of contents is expected to develop relatively light rates of spread and heat release.

First Floor: 8,704 cu. ft.

Second Floor: 7,424 cu. ft.

Third Floor: 3,584 cu. ft.

Fourth Floor: 2,048 cu. ft.

$$(21,760/7)(0.5) \times 1.5 = \mathbf{2,331 \text{ gal.}}$$

Fire Flow Rate (Reference NFPA 1142):

250

Table 4.6.1 Water Delivery Rate

Total Water Supply Required		Water Delivery Rate	
gal	L	gpm	L/min
<2,500	9,459	250	950
2,500–9,999	9,460–37,849	500	1,900
10,000–19,999	37,850–75,699	750	2,850
≥20,000	≥75,700	1,000	3,800

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

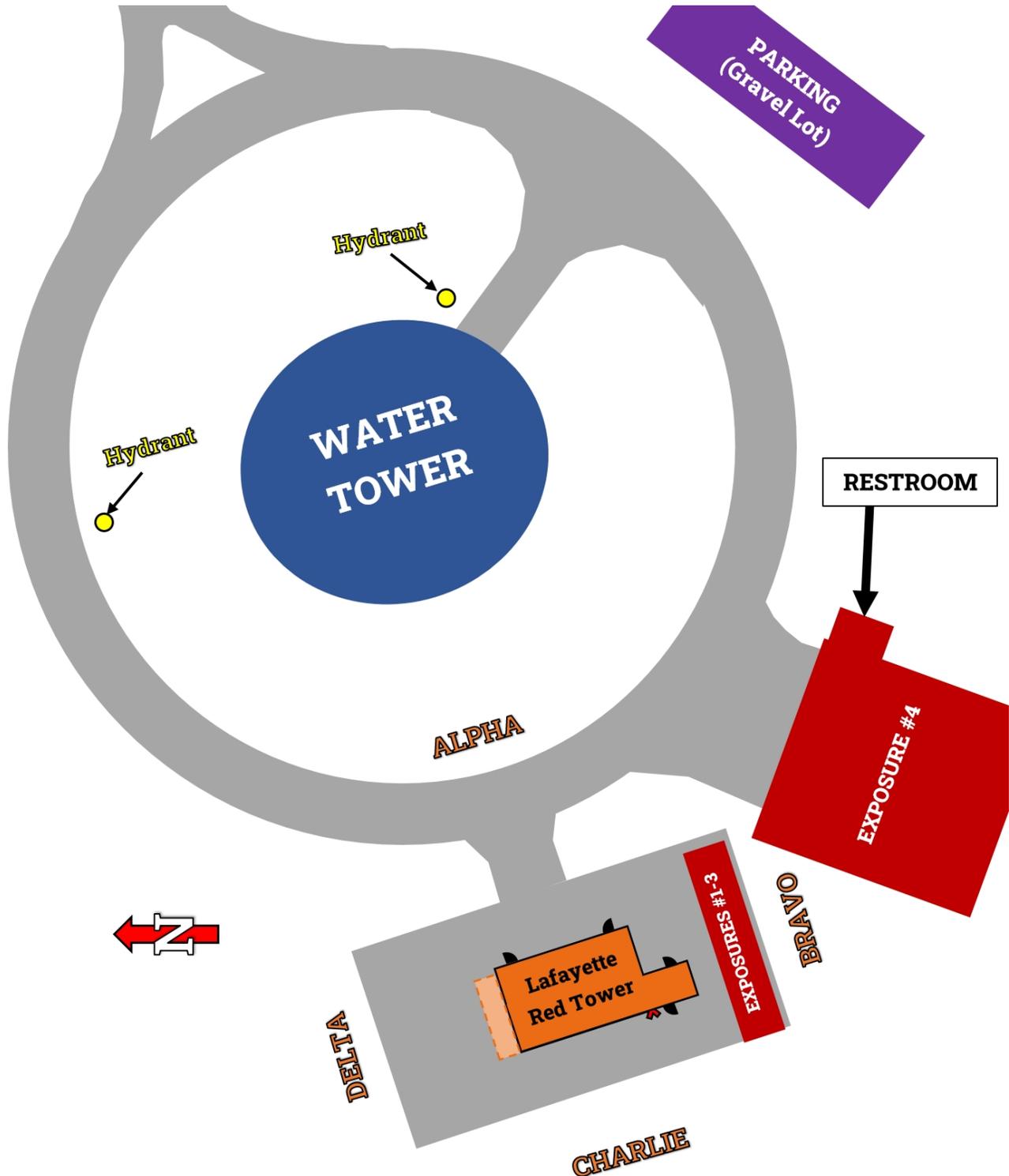
Site Plans



Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Site Plans



Required Elements: Apparatus, Hose Lines, Water Supply, Command Location, EMS/Rehab, Rally Point, Spectator Area, Hazard Area, Prohibited Areas / Off Limits (if applicable).

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Elevation Views

ALPHA SIDE

BRAVO SIDE

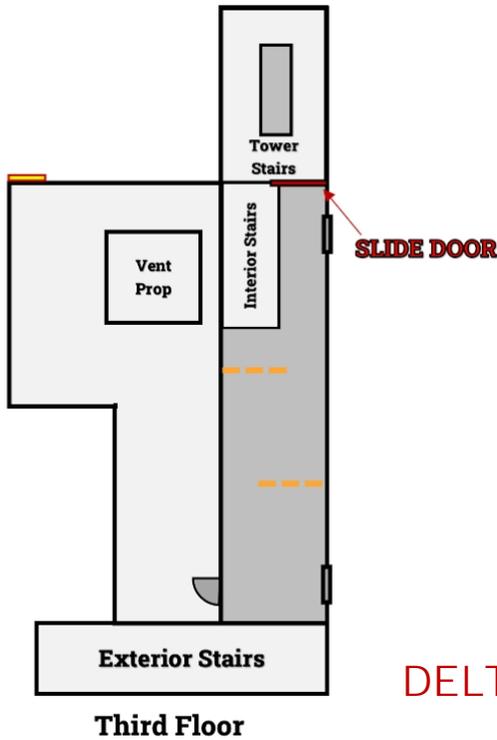
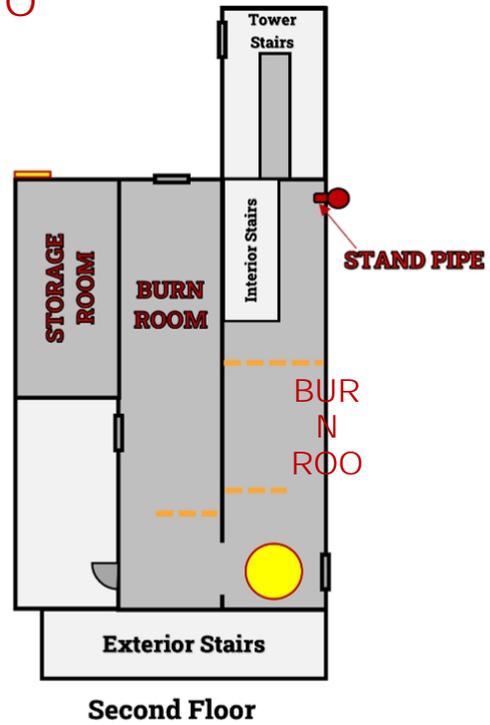
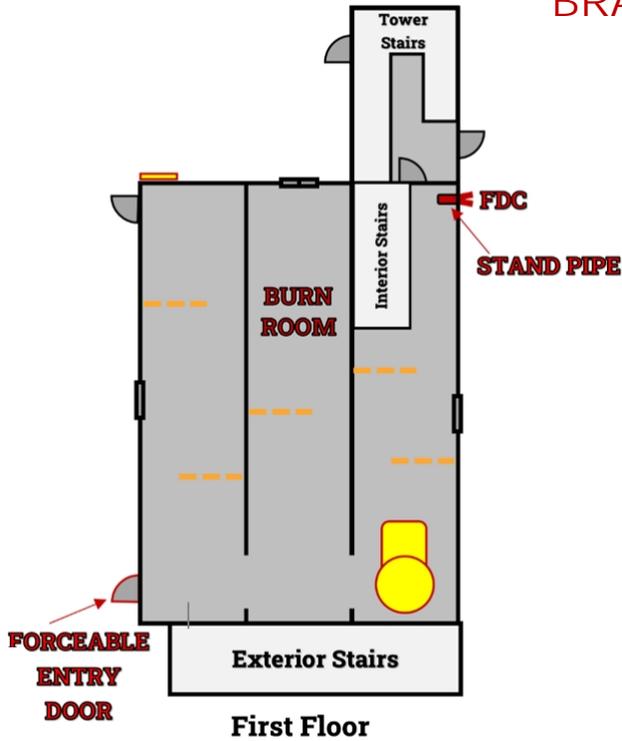


Floor Plans

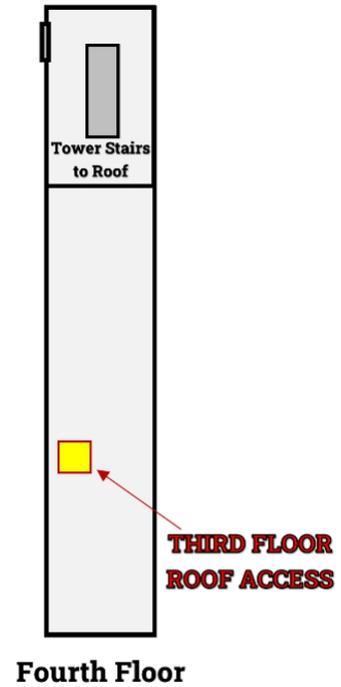
Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

BRAVO



DELTA



Required Elements: Divisions/Floors, Walls, Doors, Windows, Stairs, Sides of Building, FDC (if applicable), Operations Area, Prohibited Areas / Off Limits (if applicable).

Communications Plan

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Description of Training: Live Burn Training: Lafayette Red Tower		Location: D4 Lafayette Fire Training Center	
		Instructor-In-Charge:	
Assignment/Function	Radio Zone	Radio Channel	Name of Channel/Talk Group
NOTES:			

Emergency Evacuation Signal/Code:

Radio Evacuation:
ALL UNITS CODE 1500

Apparatus Signal After Code 1500 Declared:
SOUND AIR HORN 3 CONSECUTIVE BLASTS LASTING 2 SECONDS EACH. REPEAT THIS EVERY 10 SECONDS UNTIL EVERYONE ON THE GROUNDS IS AT THE EMERGENCY SAFETY LOCATION AND EVERYONE IS ACCOUNTED FOR BY INSTRUCTOR-IN-CHARGE.

Responsibilities of Personnel

Instructor-In-Charge:

Safety Officer:

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

- Shall at minimum hold Instructor II certification
- Shall be responsible for full compliance of, and ensure adherence to the NFPA 1403 standard by all persons within the training area
- Plan and coordinate all training activities
- Monitor activities to ensure safe practices
- Inspect training structure integrity prior to each fire
- Assign Instructors:
 - o Safety Officer
 - o Fire Control & Ignition Officer
 - o Incident Commander
 - IIC can hold this position if deemed necessary
 - o Attack & Backup hose lines
 - o Rapid Intervention Team
 - o Functional assignments
 - o Teaching assignments
- Brief instructors on responsibilities:
 - o Accounting for assigned students
 - o Assessing student performance
 - o Clothing and equipment inspection
 - o Monitoring safety
 - o Achieving tactical and training objectives
- Assign coordinating personnel, as needed:
 - o Emergency Medical Services
 - o Communications
 - o Water Supply
 - o Apparatus Staging
 - o Equipment Staging
 - o Breathing Apparatus
 - o Personnel Welfare
 - o Public Relations

EMS/Rehab Officer:

- Shall at minimum hold EMT certification
- Responsible for all medical evaluations and treatment
- Responsible for food and fluid replenishment, and relief from climatic conditions

Driver Operators:

- Shall be responsible for assigned apparatus

- Shall at minimum hold Instructor I certification
- Recommended to hold Safety Officer certification
- Shall provide safety of all persons on the scene
- Shall have the authority, regardless of rank, to intervene and control any aspect of the operations when, in his or her judgement, a potential or actual danger, potential for accident, or unsafe condition exists.
- Prevent unsafe acts
- Eliminate unsafe conditions
- Intervene and terminate unsafe acts
- Supervise additional safety personnel, as needed
- Coordinate lighting of fires with instructor-in-charge
- Ensure compliance of participants' personal equipment with applicable standards:
 - o Protective clothing
 - o Self-contained breathing apparatus (SCBA)
 - o Personal alarm devices, where used
- Ensure that all participants are accounted for, both before and after each evolution
- Conduct safety briefing and building walk-through for all participants

Instructors:

- Shall at minimum hold Instructor I Certification
- Monitor and supervise assigned students
 - No more than five students per instructor
 - ***Recommend four students or less per instructor***
- Inspect students' protective clothing and equipment
- Account for assigned students, both before and after evolutions

Incident Commander (IC):

- Shall be responsible for all operations on the training grounds.

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

- Shall be competent in all functions of assigned apparatus as determined by IIC, including but not limited to:
 - Pump Operations
 - Drafting Operations
 - Ladder Operations
- Assure water supply is established and maintained
- Shall always maintain on-board tank is full in case of an emergency
- Report any water supply issues immediately via radio to the Instructor-In-Charge
- Shall be responsible for Emergency Evacuation Signal when CODE 1500 is declared.

Fire Control Team:

- Shall consist of a minimum of two personnel, that are not students
 - Shall at minimum hold Instructor I
 - Shall include the ignition officer
- Control all fires so dangerous conditions do not occur
- One member of the fire control team shall be in the area to observe the ignition officer ignite and maintain the fire, and recognize, report, and respond to any adverse conditions.
- Shall have a charged hose line available when the fire control team is igniting or tending to any fire.
- Fires shall not be ignited without visually confirming that the flame area is clear of personnel being trained.
- Shall have no more than five students assigned to this team.

Students:

- Acquire prerequisite training
- Become familiar with building layout
- Wear approved full protective clothing
- Wear approved SCBA
- Obey all instructions
- Provide documentation of prerequisite training where from an outside agency

- Shall work in conjunction with Instructor-In-Charge and Safety Officer.
- Individual shall be familiar with facilitating Incident Commander role.
 - o If filled by student, then Instructor-In-Charge shall remain with IC to assist with decision making and to ensure appropriate commands are given.

Ignition Officer:

- Shall at minimum hold Instructor I
- Shall ignite, maintain, and control the materials being burned
- Shall be a member of fire control team
- Decision to ignite the training fire shall be made by the instructor-in-charge in coordination with the safety officer.
- Fires shall not be ignited without visually confirming that the flame area is clear of personnel being trained.
- Shall not serve as the ignition officer for more than one evolution in a row.

Rapid Intervention Team (RIT):

- Shall meet NFPA 1407 requirements
- Shall consist of a minimum of two personnel, that are not students
 - If students are included in RIT functional group.
 - Personnel shall at minimum hold Instructor I
 - A RIT Crew Leader will be established and shall at minimum hold Instructor I & Fire Officer I
- IIC & Safety Officer shall determine whether or not to include students as part of the Rapid Intervention Team.
 - Students shall at minimum meet the job requirements of Firefighter I
- Responsible for locating, assessing, and removing a downed firefighter.

Instructor & Support Roster

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Crew Assignment	Name	
Engine 1	1.	3.
	2.	4.
Engine 2	1.	3.
	2.	4.
Engine 3	1.	3.
	2.	4.
Engine 4	1.	3.
	2.	4.
Engine 5	1.	3.
	2.	4.
Engine 6	1.	3.
	2.	4.
Engine 7	1.	3.
	2.	4.

Required Elements May Include: IC, Fire Attack, Back-Up, Fire Control Team, EMS/Rehab, RIT, Search & Rescue

Go / No Go

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Safety Plan/Briefing

PPE/Equipment Required for Each Participant: *(check all that apply)*

<input type="checkbox"/>	Helmet	<input type="checkbox"/>	Bunker Pants
<input type="checkbox"/>	Eye Protection (Type):	<input type="checkbox"/>	Boots (Type):

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Hearing Protection	SCBA
Gloves (Type):	Radio:
Bunker Coat	Other Resp. Protection (Type):
Hood	Other (Specify):

1. **List basic steps required to safely complete evolution(s).**

2. **Identify potential accidents or hazards.**

3. **Determine recommended safe procedures.**

4. **Live Fire Procedures.**
 - **Fire Control Team** - Monitor burn room temperatures with a Thermal Imaging Camera (TIC) and ensure they **do not elevate past 800 degrees Fahrenheit**
 - **Fire Attack/Back Up/Fire Control Team** - Ensure participants **do not spray water on the Grey Tower's burn room ceiling and wall panels** to avoid damage via rapid direct cooling
 - **Fuel Load:** Ensure that burn room fuel loads are limited to one bail of straw and two pallets
5. **ADDITIONAL INFORMATION:**

In Case of Emergency: (check all that apply)

✓	Code or Signal Used: CODE 1500 & Air Horn Blasts (See Communication Plan)
	RIT Assigned:
	ALS Standby:

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

Hazards & Control Measures: (check all Hazards AND write in control measure)

Atmospheric (smoke, dust, low oxygen, etc.):
Combustible/Flammable Environment:
Nighttime conditions:
Sharp Edges/ Objects:
Structural:
Terrain: Stairs:
Traffic:
Water:
Weather:
Other:

Accountability System:

Safety Resources Assigned:

Weather Considerations:

Communication Plan:

Locations to Point-Out (Site Plan):

GENERAL SAFETY MESSAGE:

Medical Plan

EMS/Rehab Officer: _____

Level of Care: ALS BLS

Ambulance Transport Service On-Site: Yes No

If yes, what service: _____

Rehab Procedures

- Provide rest, hydration, heat evaluation, & climate relief

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____

- Obtain Vitals Pre & Post Live Burn Evolutions (All Participants)
 - Utilize charts below for recommended actions based on vitals.

NFPA 1584 Recommendations					
Blood Pressure	Heart Rate	Pulse Ox.	Resp. Rate	Temp.	Recommended Action
<160 systolic <100 diastolic	<100	>94%	12-20	<100.6 F	Discharge from rehab.

Blood Pressure Recommendations	
Blood Pressure	Recommended Action
<140 systolic <90 diastolic	Discharge from rehab.
140-160 systolic 90-100 diastolic	Discharge from rehab. Recommend primary care physician follow up for recheck.
160-180 systolic	Remove from active scene work and remain in rehab. Re-evaluate vitals in 5 minutes, if improving but not enough then re-evaluate after 10 additional minutes. If participant has improved enough then discharge from rehab. If improvement is not enough after 15 minutes participant should remain on light duty until cleared by primary care physician.
>180 systolic >120 diastolic	Transport to emergency department.

The charts above is for recommendation only. EMS/Rehab Officer shall be responsible for determining if an individual shall be released from rehab or if further actions need to be taken.

Life Threatening Emergencies – Ground Transport:

- Transport via _____ ambulance service to IU Hospital due to proximity to Lafayette Fire Training Facility. Transporting service can divert from IU Hospital if deemed necessary.

Non-Life Threatening Emergencies – Ground Transport:

- Transport to IU or St. Elizabeth hospital (individual injured shall determine), via _____ ambulance service or personal vehicle. Transport option shall be determined by EMS/Rehab Officer.

AMBULANCE NOT ON-SITE

In the event an ambulance is required, contact Tippecanoe County Dispatch via _____ and request either ALS or BLS ambulance transport from Lafayette Fire Training Center. Provide Tippecanoe County Dispatch with description of injury(s) and number of patients.

Injuries (Non-Emergent):

- Released from rehab, EMS/Rehab Officer shall determine if individual is cleared to participate or shall be removed from active scene work.

**ALL INJURIES SHALL BE REPORTED TO INSTRUCTOR-IN-CHARGE.
ALL INJURIES SHALL BE DOCUMENTED BY EMS/REHAB OFFICER.**

Plan Approved by IIC (Signature): _____ Date: ____/____/____

Plan Approved by 1403 Instructor (Signature): _____ Date: ____/____/____