CAL FIRE
San Luis Obispo
County Fire Department

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Re: CAMP SAN LUIS TACTICAL DRILL GROUNDS
STANDARD OPERATING PROCEDURES INTRODUCTION

SCOPE

This Standard Operating Procedure is based on NFPA 1403 and SFM Fire Control 4 Guidelines and will be updated as guidelines are changed. It deals with the training on Liquefied Petroleum Gas (LPG) Fire Fighting Props located at the drill grounds. It also deals with training and safety in use of the live fire tower for hose line operations and rescue practices inside a structure.

GENERAL

Live fire training is an excellent means of training fire fighters. While this type of training provides high levels of realism, it obviously carries with it most of the hazards of real firefighting at an actual emergency. This live fire training exercise must be planned with great care and supervised closely by qualified instructional personnel.

Strict safety practices shall be applied to all exercises, both in the use of the interior operations within the structure and in the live fire training exercises conducted on the LPG props.

PROTECTIVE CLOTHING AND EQUIPMENT

Each participant (student and instructor) shall be equipped with full firefighting protective clothing, including protective hoods and Self Contained Breathing Apparatus (SCBA).

PREPARATION OF LPG PROPS

An inspection of each prop shall be conducted by the lead instructor and safety officer to determine that all valves are functional and the props used is not showing any signs of fatigue.

EXPOSURES

Any adjacent property that might become involved shall be adequately protected from damage or removed.

- Pedestrian traffic in the vicinity of the prop shall be kept clear of the operation area.
- If weather conditions present hazards to the students, the exercise will be terminated.

VEHICLE PARKING/STAGING

Designated areas will be assigned for staging, operating, and parking of fire apparatus used in the live fire training evolution. All vehicles that are not part of the evolution shall park in the parking lot area.

SPECTATOR SAFETY

All spectators shall be restricted to an area outside the operations area perimeter established by the instructor in charge.

PRE-BURN BRIEFING SESSION

Prior to conducting actual live fire training and/or training in the structure, the Lead Instructor shall conduct a safety briefing for all participants. All staff personnel who will be part of the exercise shall attend this briefing.

* With IAP covering

- Safety
- Individuals trained and trainers
- OPS/IC/Div/Groups etc...
- Medical etc.

POST TRAINING CRITIQUE

A post training critique session, complete with documentation, shall be conducted to evaluate student performance and to reinforce the learning experience of all participants. The lead instructor should hold a post training critique with staff personnel involved to discuss the pros and cons of the exercise and how it might be improved.

FUELS: MATERIAL TYPES

The fuels that are utilized in live fire training on the props shall be Liquid Petroleum Gas. Exceptions: small amounts of non-contaminated diesel fuel or kerosene may be used in a flash pan for fire extinguisher training and igniting a Class A fire in the burn tower.

WATER SUPPLY

There must be a minimum of 750 GPM flow of water that can be sustained for 15 minutes. The water supply must be delivered by a hydrant or the storage tank provided at the facility. The primary source shall be the storage tank. A line shall be in place and charged from the yard fire hydrant to be utilized by the Pump Operator should the Engineer experience problems.

In the layout for the LPG live fire props, there are two ways to create maximum safety for the crews on the lines. These are: commit two engines to the pumping operation, each engine will supply one attack line and one backup line. The second alternative is to have one engine committed, and lay out two 2-1/2 lines with gated wyes and 1-1/2 attack lines. Each 2-1/2 will supply one attack line and one backup line.

INSTRUCTORS

GENERAL

QUALIFICATION OF INSTRUCTORS

Depending upon who the lead agency is conducting the training, the criteria for qualifying shall be the following: for SLO CO. FIRE/CAL FIRE, the director of training shall deem when an individual is qualified, for Allan Hancock College, the coordinator of Fire Technology shall deem when an individual is qualified.

* I.D. training requirements min level
Qualifications test?
Both/all agencies agree on instructors

STUDENT STAFF RATIO

During all live fire exercises and interior evolutions, where heat and smoke is generated, the student to staff ratio shall not be greater than five (5) to one (1).

INSTRUCTOR RESPONSIBILITIES

The lead instructor/exercise coordinator shall be responsible for full compliance of these standard operating procedures.

POSITION DESCRIPTION

LEAD INSTRUCTOR

1. Shall assign the personnel to the positions described below. The filling of each of these positions by an individual is optional depending upon the student to staff ration.
2. Conducts all planning meetings before, during, and after the training exercises.
3. Develops the Exercise Plan and conveys it to the students and staff during the pre-fire briefing.
4. Coordinates and is responsible for the completion of all agency paper work and reports.
5. Organizes the students into workable units, it is recommended that they be divided into crews or teams.

SAFETY / MEDICAL UNIT OFFICER

All live fire training exercises must have a safety officer and shall be an individual other than the lead instructor.

1. Shall be responsible for reviewing the plan of the exercise and site usage.
2. Has total authority to stop any exercise.
3. Assists during the critique of the exercise. Must be familiar with fire behavior.
4. Accountable for proper personal protective gear being worn.
5. Is responsible for adequate water supply and pumping capabilities.
6. Determines if the props are structurally sound before, during, and after the exercise.
7. Oversees the Control Tower Operator's function.

8. Insures proper medical equipment is on site. The minimum equipment shall include: first aid kit, burn kit, oxygen respirator, backboard. He / she notifies Co. ECC of medical injury who in turn dispatches ambulance/engine as directed by R.P.
9. Initiates action for the transportation of the injured.
10. Initiates communications to the hospital of transport of injured.
11. Verifies that reports are made on all injuries no matter how small.

* Must have all injuries reported to SLO ECC via 911, radio or phone.

TRAINING BUILDING

SCOPE

The purpose of the training building at Camp San Luis is to train personnel in: the use of SCBA's, charged hand lines, full protective clothing, rescue practices, advancing lines, and team work in a confined space.

GENERAL

Some heat and smoke may be generated within the structure. It can be generated within the building by building a small live fire in the basement. Class A materials shall be used in only the amounts necessary to create the desired fire size, the fire size shall be limited to the amount of wood in an average size pallet. The location of the fire shall be placed in the designated Live Fire area of the burn tower

* Small fires, Class A material only!

The use of flammable and combustible liquids in NFPA 30 shall be prohibited. Exception small amounts of uncontaminated diesel fuel or kerosene may be used for ignition of Class A materials. The amount of Class B liquids shall be limited to no more than one quart.

Clean straw provided at the facility can be added to the fire loading to enhance the creation of smoke. If the smoke generation from the fire is not sufficient in the main floor area, it may be augmented by using smoke bombs or one of the smoke generators.

Additional Class A material may be added to the fire areas as the original fire load burns down. When adding fuel load to an existing fire, a protective handline shall be taken in to protect the individual adding the Class A fuel. In no case shall there be Class B fuels poured on to the burn materials. Any application of flammable materials after the initial fire shall be applied by the use of a driptorch. This process shall be supervised by the Safety Officer. Two protective handlines shall be utilized. Personnel involved in this operation shall be in full protective clothing and SCBA's.

OPERATIONS

The Lead Instructor shall be in overall command of the training exercise. It is their responsibility to oversee the entire evolution. He / She may designate one of the assistant instructors to conduct the pre-entry instructions on the tactical objectives and safety briefings. The entry team shall be accompanied by one of the instructors. Their primary responsibility is to serve as the Interior Safety Officer and give any tactical direction to the team leader that they may deem necessary. A second team shall be suited up with full protective clothing and SCBA's. They shall be prepared to make entry as backup for the team working inside the structure. This will expedite the training exercise, by having the backup team being the next group to enter the structure. An instructor will be assigned to the backup team and shall accompany them should they have to make entry.

The Safety Officer shall be responsible to oversee the preparation and suiting up of all personnel who are going into the structure. They must have complete turnouts, including nomex hood and helmet and SCBA's. The bottles shall be checked for volume (pressure) and that the low pressure warning device is functioning properly. The Safety Officer shall determine that the condition of the turnouts are in suitable condition as safety gear. Should it become necessary, at any time during the interior exercise, to terminate the exercise, the Lead Instructor or the Safety Officer shall have an audible device to notify all personnel on the inside to collectively evacuate the building. The device may be a whistle or horn of sufficient volume to alert all personnel within the structure. Pre-designated signals shall be established, and all personnel at exercise are to be aware of what these signals are.

* Define audible alarm. Horn, siren, or air horn and in what series!

PRE-INSPECTION AND POST-INSPECTION

A pre-inspection of the building shall be conducted. Entry ways and exits shall be checked to see that they function properly and are not blocked with anything that is going to impede their operation. The window shutters shall be checked to see that they will close and open properly. The general structural integrity of the building needs to be looked at from a safety standpoint so that there will be no surprises once the exercise has started.

A post-inspection of the structure shall be made, and any deficiencies noted and reported to those responsible for maintenance. All gear and tools during exercise shall be picked up and stored in their proper place. Any shortage of materials, i.e. straw, propane, etc. should be noted and information passed along to the Lead Instructor.

FLAMMABLE LIQUID PROPS

GENERAL

The props as they are constructed at this facility are installed to simulate both flammable liquids and flammable gases. The material utilized for burning is Liquefied Petroleum Gas (LPG).

CHECKOUT PROCEDURES FOR LPG PROPS

Under direct supervision of the Safety Officer, the props will be inspected to see that all valves are functional and safe to operate. Prior to the training, the Safety Officer shall witness the lighting of all props for testing and safety procedures.

* Lighting Procedures

- Valves sequenced and in proper mode
- Safety valve operational
- Pilot light adjusted and functional
- Lighting of props will be accomplished by utilizing the LPG torch
- Full turnouts in use at all times

LPG PROPS

I. ELEVATED PLATFORM -

The elevated platform is an exercise to simulate a fire in a restricted access situation where space is a problem and at an elevated height. The strategic objective is to gain access to the control valves and shutoff the flow of fuel. The tactical objective is to do this with two attack lines and two personnel protection lines.

II. CHRISTMAS TREE -

The Christmas tree prop is to simulate a large uncontrolled release of gas or liquid on fire, where the control valve is in very close proximity to the leak itself. The strategic objective is to control and extinguish the fire by shutting off the flow of fuel. The tactical objective will vary between a flammable liquid and a flammable gas. The approach between gas and liquid is the same, except with liquid, you can expect ground fires that will have to be swept from under the area used as the approach.

III. FLANGE FIRES -

The flange fire prop has two flanges, one on a horizontal plane, and one on a vertical plane. They can be controlled individually or used with both flanges burning. The strategic objective is to gain access to the control valves and shut off the flow of fuel. The tactical objective is to utilize two attack lines and two personnel protection lines to safely gain access to the control valves and shut off flow of fuel.

IV. HORIZONTAL TANK -

The horizontal tank is designed to simulate a LPG storage tank with a liquid leak and fire at bottom of tank, with a relief valve open on top of the tank. The relief valve and liquid leak are individually controlled. The strategic objective is to protect the tank from further heating and gain access to shut off the flow of fuel. The tactical objective is to cool tank with a minimum of two 1-1/2 fog lines, create a water protection curtain and shut off the flow of fuel at the tank, thus relieving pressure build up and allowing the relief valve to reseat. The two attack lines shall always be backed up with two personnel protection lines of a size equal to the attack lines.

V. OPEN TOP TANK -

The open top tank is designed to simulate a flammable liquid fire for training in the use of dry chemical extinguishers. The prop utilizes LPG in a vapor state and is released below the water level through a series of gridded pipes. The strategic objective is to utilize the chemical reaction of the fire and extinguish it. The tactical objective is to apply the dry chemical in such a manner that it will blanket the entire fire area and extinguish it. It may be accomplished with one or more portable extinguishers.

CONTROL TOWER

CONTROL TOWER OPERATOR

This individual controls the fuel flow from the control tower to all props and is responsible for making sure that all operational valves and emergency shut off controls function properly prior to the training exercise's start.

In some cases, depending upon the size of class, the Tower Operator may be designated as the Safety Officer. In this case, he/she will be directly responsible to the Lead Instructor. In larger classes, the Tower Operator will be responsible to the Safety Officer, who will be on the ground closely overseeing all aspects of safety.

CONTROL TOWER OPERATIONAL VALVES

Each prop has individual operational valves located in the tower and at the props themselves. They should be sequenced based on how the individual prop works. Each valve is labeled as to its function.

EMERGENCY SHUT DOWN CONTROLS

Each of the following props have emergency shut down valves, elevated platform, Christmas tree, flange fires, horizontal tank. They are to be utilized should any condition arise that indicates the exercise is creating an unsafe condition for those people
working on the exercise. Some of these controls are located in the tower and some are located at the prop themselves. Those located in the tower are electrically controlled by remote pull cables. When these props are being used there shall be a person assigned to that function, and shall stay with that control device any time that the prop is burning. The prime responsibility for initiating emergency shutdown of a prop shall rest with the Safety Officer. But any member of the staff that is working on the exercise may initiate the command for emergency shutdown and should do so if they feel or anticipate an unsafe condition. The emergency shutdown valves shall not be utilized as an operational valve in the sequencing of an exercise.

QUALIFYING OF CONTROL TOWER OPERATOR

Prior to actually taking over control of the tower, the individual shall demonstrate their ability, knowledge and responsibility of operationally running of the tower and their responsibility to the safety of the personnel training on the props.