

# SOUTH PORTLAND FIRE DEPARTMENT

## STANDARD OPERATING GUIDELINES

<b>SOG #:</b>	6.613	<b>Effective Date:</b>	2/17/2022
<b>Title:</b>	Hazmat Response to Flammable Liquid Leaks	<b># of pages:</b>	3
<b>Category:</b>	Hazardous Materials Response	<b>Classification:</b>	Red

1. **PURPOSE:** The purpose of this SOG is to describe procedures for response to incidents involving flammable liquids outside a facility, such as at a private residence or a tanker truck roll over. **This SOG is not for a response to a fixed facility such as Portland Pipeline.** For a response to a fixed facility refer to SOG: Tank Farm Operations as those facilities have engineered systems in place to assist with controlling a leak/extinguishing a fire at one of those facilities.

2. **PROCEDURES:**

The four primary areas of concern at a flammable liquid leak are:

- Firefighter and civilian safety
- Extinguishment of flammable liquid fires
- Spills without fire
- Disposal

Flammable liquids present particular problems for fire protection, health, safety, and environmental protection. The frequency of encounters with flammable liquids makes them a particular concern for the fire department.

The main operational problems with flammable liquids are fire extinguishment, ignition prevention, and disposal of spills. All three of these may be involved in the same incident.

**MAINE DEP should be contacted early for any event that involves a leak of flammable liquids**

### **Extinguishment**

The preferred agent for flammable liquid firefighting is AFFF/Class B Foam (Aqueous Film Forming Foam). SPFD apparatus that carry AFFF/Class B Foam are:

- E-41 No Foam but Williams System
- E-44 250 gallons AR-AFFF
- L-45 Class A Foam but pump can satellite B Foam
- E-46 500 gallons AFFF
- E-48 30 gallons AR-AFFF
- E-49 500 gallons AR-AFFF (Fire & Foam Pumps OOS-tender only)
- Foam Trailer 990 gallons AFFF

Attack on any flammable liquid fire should be made with Class B Foam when available. When the fuel is ethanol, or ethanol based fire attack should utilize an Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF) due to the high alcohol content of the fuel. The use

of alcohol resistant Class B Foam is also required when dealing with any polar (water soluble) flammable liquid. Class B Foam should be applied at the percentages specified by the foam concentrate manufacturer (which is normally 3%).

The extinguishing action of Class B Foam is based on its ability to rapidly cover the flammable liquid surface with a film. This film prevents the escape of flammable vapors, but may have difficulty sealing against hot metal surfaces. The application of Class B Foam should be gentle to avoid breaking the seal and agitating the liquid below.

Class A foam has no ability to suppress vapors and re-ignition is an extreme possibility.

Fires involving a large area of burning flammable liquids may exceed the ability of one hand line to extinguish. It may be more important for Command to wait until there is enough Class B Foam on site to initiate a coordinated attack. One 95 GPM Class B Foam line is needed for every 600 square feet of spill area. The initial fire attack will require 187 gallons of concentrate when used at 3% and 374 gallons of concentrate when used at 6%. Water master streams should be used to cool and protect exposures during the interim until a foam operation can be initiated.

## **Spills**

Flammable liquid spills include spills without fire and any remaining fuel after a fire has been extinguished. In both of these cases, the liquid must be protected to prevent ignition until it can be picked up or removed.

All personnel working around spills must wear full protective clothing to afford protection in case of possible ignition. SCBA must be used in vapor areas which are located through the use of combustible gas indicators.

- Do not permit the flammable liquid to run-off into storm drains, sewers, or drainage systems. Dam the run-off and cover drains and sewers pending disposal. Consider the use of drain covers, dikes, charged hose lines, black plastic, or dirt to prevent the further spread of spilled material if it can be done safely.
- Control ignition sources in the area of the spill. Extinguish pilot lights, flares, open flames, etc. Prohibit smoking. Position vehicles to prevent contact of vapor with running engines or exhaust. Disconnect electrical power from a remote location to prevent arc-caused ignition.
- Cover spills with Class B Foam to seal vapors. The application will need to be repeated regularly, as the seal will break down in 10 to 15 minutes. One 95 GPM Class B Foam line is needed for every 600 square feet of spill area. The initial application will require 43 gallons of concentrate when used at 3% and 86 gallons of concentrate when used at 6%. Crews will need to check for escaping vapors with a combustible gas indicator to judge when the seal is breaking down.
- Consider placing AreaRAEs around the hot zone and in basements of target areas to remotely read for vapor movement.
- In the case of a leaking vehicle attempt to bond and ground the vehicle using appropriate bonding equipment.

**Disposal**

Large quantity spills will need to be disposed of by a specialized hazardous materials clean-up contractor. This may require a fuel transfer pump or vacuum truck and personnel familiar with fuel transfer precautions. Maine DEP will be the primary contact in arranging the cleanup/transfer of product

Smaller spills, which cannot be picked up by vacuum truck, must be absorbed, if it has not already evaporated. Use of sand/speedy dry as an absorbent is not recommended. The first choice should be using absorbent pads (provided by the DEP). There is a supply of pads at Central Station and the DEP will have a supply. Additionally, there is normally a pallet load of speedy dry stored at Central.

**Safety**

As early as possible, a hazard zone should be established and marked through the use of fire line tape. This zone should include the spilled material in the area downwind of the spill of sufficient distance to account for reasonable vapor travel:

All personnel working in the hazard zone must wear full protective clothing including SCBA with face piece on.

Unless absolutely necessary, personnel shall not work in a spill area. When this is necessary to perform a rescue or to control a leak, the spill must be covered with foam and all possible precautions against ignition must be taken. The area shall be monitored with a combustible gas indicator.

**3. REFERENCES:**

- None

By Order Of:



James P. Wilson  
Fire Chief