APPLICATION OF CLASS "B" FOAM/AFFF CONTAINING PFAS

PURPOSE

The purpose of this MP is to define the circumstances that require the application of Class B Firefighting Foam/AFFF(Aqueous Film Forming Foam) that contains PFAS.

Not all Class B Foams or AFFF contain PFAS. This MP only refers to the operational use and responsibilities after application of Class B Foams or AFFF containing PFAS.

DEFINITIONS

A hazardous chemical is any chemical that is classified as a physical or ***health*** hazard.

A chemical is a **physical hazard** if it is likely to burn or support fire.

A chemical is a **health hazard** if there is significant evidence that acute or chronic health effects may occur in exposed employees.

Flash point is the minimum temperature at which a liquid gives off vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid.

A liquid is **flammable** if it has a flash point below 141F.

A liquid is **combustible** if it has a flashpoint between 140-200F.

Class "B" Foam/Aqueous Film Forming Foam (AFFF) that contains PFAS is typically used to extinguish highly flammable or combustible liquid class B fires, such as fires involving fuel tankers (e.g. over-the-road or railroad), aircraft and oil refineries.

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals. Examples of where PFAS can be found include cleaners, textiles, leather, paper and paints, ***fire-fighting foams***, and wire insulation.

BACKGROUND:

The Arizona Department of Environmental Quality (ADEQ) urges Arizona's fire departments and emergency responders to take extreme care to minimize the release of Class B Firefighting Foam/AFFF containing PFAS into the environment. Uncontrolled release of PFAS to the environment has the potential to create adverse impacts to public health and the environment if it reaches drinking water, ground water or surface water. Exposures in the workplace can also occur if skin contact occurs with concentrated products or through inhalation. Certain PFAS can accumulate and stay in the human body for long periods of time and there is evidence that exposure to PFAS can lead to adverse health outcomes in humans.

As of January 1, 2020, Arizona Revised Statute (ARS) § 36-1696 states that no person, local government, or state agency may discharge or use class B firefighting foam that contains intentionally added PFAS chemicals for training or testing purposes unless

otherwise required by law or conducted at a facility that provides containment, treatment, and disposal measures that prevent uncontrolled releases into the environment.

The statute does not restrict the manufacture, sale or distribution of class B firefighting foam containing intentionally added PFAS or the use of the foam in emergency firefighting or fire prevention operations.

The Code of Federal Regulation's Occupational Safety and Health Standards within Title 29, Part 1910, Subpart Z, § 1910.1200, requires that employers communicate to its employees any hazardous chemicals that are known to be present in the workplace, their associated hazards, how to protect themselves, and provide training in their use.

OPERATIONS

Our Standard Operating Procedures combined with federal and state regulations provide our department guidance on the use of Class B Firefighting Foam/AFFF containing PFAS at emergency incidents. We must always begin with the question, "Why are we taking risks at this incident?"(MP.201.01C, Risk Management and Safety). The critical factors that are present will help us answer this question by indicating the tactical priorities (MP 202.02A, Tactical Objectives) that must be addressed and assist us in creating an incident action plan. Critical factors on an incident involving the release of flammable and or combustible liquids include:

- life safety of civilians and that of our members
- outside ambient and surface level temperatures
- flash point and amount of the product released
- if the released flammable liquid has ignited
- protection of property that is a potential exposure
- soil and nearby storm drains or waterways that are environmental exposures

If a flammable or combustible liquid that is accidentally released has a flash point that is approaching ambient or surface level temperatures and the amount of product released threatens life safety or property if ignited, then the application of Class B Firefighting Foam/AFFF containing PFAS should be considered. If the same liquid ignites, Class B Firefighting Foam/AFFF containing PFAS should be applied to reduce the products of combustion. If a large amount (55 gallons or more) of a flammable or combustible liquid is accidentally released, but there is no threat to life safety or property, then Class B Firefighting Foam/AFFF containing PFAS should not be applied to the liquid. Application in this instance produces an unnecessary exposure to personnel and may inhibit the ability to control the release of hazardous chemicals (both flammable or combustible liquids and Class B Firefighting Foam/AFFF containing PFAS) into the environment.

Permit Required

Any section that uses Class B Firefighting Foam/AFFF containing PFAS, on an incident, will be required to complete the use permit, attach a Chemical Reference Worksheet, and is responsible for the maintenance of the record. A copy of the permit must also be

submitted to the Safety and Prevention section to support documentation and tracking of Toxic Exposure reports from the incident.

Personal Protection and Decontamination

If the decision is made to apply Class B Firefighting Foam/AFFF containing PFAS during an incident, the following must be addressed,

- The Incident Commander must inform all crews that Class B Firefighting Foam/AFFF containing PFAS is being applied.
- Hazard Sector must inform any nearby crews of application.
- All personnel operating in the hot zone (MP 204.01, Hazardous Materials) must wear their turnouts and ***use*** their SCBA.
- Crews must make every effort to avoid contact with any applied Class B Firefighting Foam/AFFF containing PFAS.
- Members who are outside of the hot zone in a support role and are handling and supplying open containers of Class B Firefighting Foam/AFFF containing PFAS to operations personnel in a forward position, must wear personal protective equipment. This includes a chemical splash protection garment, chemical resistant gloves, and an N-95 particle mask.
- If exposed to Class B Firefighting Foam/AFFF containing PFAS, crews must adhere to the Fireground Exposure Reduction Policy, MP206.02.

Notifications and Reporting Requirements

The application of Class B Firefighting Foam Class B Firefighting Foam/AFFF containing PFAS on an incident, will require notifications to C99 and the Arizona Department of Environmental Quality (ADEQ) to coordinate clean-up and remediation. The Safety and Prevention section must also be contacted to initiate a Toxic Exposure Notification.

REFERENCES

29 C.F.R. § 1910.1200, Hazard Communication.

A.R.S. § 36-1696, Firefighting foam; prohibited uses; exception; definitions.

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Barragan, A. (2024, Jan 18th). Personal communication [phone interview].

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Occupational Safety and Health Administration. (2024). Definitions. Code of Federal Regulations. https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I/subchapter-C/part-173/subpart-D/section-173.120

Occupational Safety and Health Administration. (2024). Hazard Communications. Code of Federal Regulations. https://www.ecfr.gov/current/title-29/subtitle-B/chapter-XVII/part-1910/subpart-Z/section-1910.1200

US Fire Administration. (2020). The Hidden Dangers in Firefighting Foam. The hidden dangers in firefighting foam (fema.gov)

Application of Class "B" Foam/AFFF Use Permit

Phoenix Fire Department

Date:	Address:
Incident Number:	
RP Information:	
Product Information:	
Critical factors to consider on an incident involving the release of flammable and or combustible liquids include:	
Is there a risk to Life safety of civilians and that of our members?	
Outside ambient and surface level temperatures	Surface Temp:
	Air Temp:
Flash point and amount of the product released	Flash Point:
	Amount Released:
Has the released flammable liquid has ignited?	
Is there a risk to property that is a potential exposure?	
Is soil and nearby storm drains or waterways environmental exposures?	

If the decision is made to apply Class B Firefighting Foam/AFFF containing PFAS **during an incident, the following must be addressed:**

	The Incident Commander has informed all crews that Class B Firefighting Foam/AFFF containing PFAS is being applied
	Hazard Sector has informed nearby crews of application
	All personnel operating in the hot zone are wearing their turnouts and their SCBA
	Members that are outside of the hot zone and are handling and supplying class B foam to operations personnel in a forward position, are wearing personal protective equipment that includes a chemical splash protection garment, chemical resistant gloves, and an N-95 particle mask
	If exposed to Class B Firefighting Foam/AFFF containing PFAS, crews are adhering to our Fireground Exposure Reduction Policy, MP206.02.

Phoenix Crews Assigned:
Gallons of Foam Concentrate Used:
Incident Commander:
Signature:
Hazard Sector:
Signature: