



Southern Region Proposal for: Large Flow Water/ Foam Firefighting System

Presented by the New Jersey Division of Fire Safety

Overview

The parameters used to develop the specifications for the southern New Jersey Counties are the same parameters as the 2004 UASI firefighting foam cache initiative which was based on the UASI "Follow-the-Hazards" strategy.

The Division of Fire Safety conducted a needs and preparedness assessment of the southern region's fire department ability to mitigate fires involving bulk flammable liquids. Based on this analysis, the Division concluded:

1. A need to establish a bulk firefighting foam concentrate reserve to protect the critical petrochemical infrastructure located in and along the Delaware River.








Note: The amount of bulk foam maintained by municipal/county entities in the southern region ranges from a few hundred gallons to approximately 2500 gallons

2. Establish a large flow water/firefighting foam delivery system to control and mitigate major flammable liquid fires.

Note: The equipment identified in this proposal is highly specialized and not typically considered conventional first line fire fighting equipment. Although the need for this equipment exists most municipalities can only fund equipment for their most common needs, thus creating a void for municipal fire departments to respond to rare but catastrophic flammable liquid events

Recognizing the scope and cost of this expenditure the Division developed the following specific performance standards in order to achieve the highest return on investment.

The following firefighting requirements address the need for maximum versatility and capabilities and are derived from the petrochemical industry's own state-of-the-art flammable liquid firefighting best practices. They focused on:

-  **Large above-ground water flow and distribution (5,000 gallons per minute or more)**
-  **Finished firefighting foam delivery of at least 5,000 gallons per minute**
-  **Underwriters Laboratories, Factory Mutual listings, approvals and certifications**
-  **Environmentally friendly, EPA, USCG approved firefighting foam concentrate**
-  **Mobile and rapidly deployable system**
-  **Multiple uses**
-  **Can be operated with minimum amount of personnel**

The systems purchased for the UASI region and proposed for the Southern region meet or exceed the above parameters. The UASI equipment is currently in service and resides through out the six county region.

Component performance standards:

Pumping System

- Minimum of 5,000 gallons per minute for at least one (1) mile
 - Pump System Requirements
 - Modular Intermodal design capable for deployment on various platforms (aircraft, waterborne vessels or barges)
- Deliver 5,000 gallons per minute (gpm) @ 150 pounds per square inch (psi)
 - Pumping system must be able to traverse a total of 150 ft from any water source and up to 50 ft vertical lift (inclusive of total traverse distance)
 - All-function pump control allowing single operator capability
- Interoperable with the UASI Large Flow System
 - 12" connections to match 12" super aqueduct hose

Large Water Flow – Large Diameter Supply/Delivery Hose

- 12" diameter (minimum) flat-lay hose 400 psi burst pressure
 - Long 500 – 600' hose lengths.
 - Hose certified for potable water use
 - 12" hose couplings certified to operate at 175 psi, hydrostatic test pressure at 225 psi, and leak proof at 400 psi
- Hose transport system capable to deploy with minimum of two (2) or less operators
- Interoperable with the UASI Large Flow System

Foam Delivery Device

- Capable of delivering 5,000 – 8,000 gpm with minimal pressure loss
 - Trailer-mounted with 12" hose connection
 - Variable hydraulically operated pattern adjustment allowing adjustment while flowing
 - Field tested and certified with approved firefighting foam concentrate
- Interoperable with the UASI Large Flow System

Firefighting Foam Liquid Concentrate

- Listings, approvals and certifications include UL (Underwriter's Laboratories) approval, FM (Factory Mutual) approval and USCG (United States Coast Guard) approval to the appropriate standards for flammable liquid fires
- Gasoline Blends as well as listings with all UL and USCG polar solvent categories
- Biodegradable and contains no ingredients reportable under the Superfund Amendments and Reauthorization Act (SARA) Title III, Section 313 of 40 CFR-372 or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

 **Firefighting Foam Liquid Concentrate (continued)**

- Non RCRA – listed waste or hazardous waste as characterized by 40 CFR 261 as sold
- Firefighting foam concentrate must not contain any Glycols or Glycol ethers or any other substances included on US federal hazardous substance reporting lists
- Manufacturer have the capability to store and supply large quantities of foam concentrate for extended incidents or re-supply after or during an emergency to maintain the continuity of protection
- Interoperable with the UASI Large Flow System