

**Environmental Security Technology Certification Program (ESTCP)**

**DEMONSTRATION AND VALIDATION OF ENVIRONMENTALLY SUSTAINABLE METHODS TO CLEAN FIREFIGHTING DELIVERY SYSTEMS**

**OBJECTIVE**

The Department of Defense's (DoD) goal is to eliminate fluorinated compounds from firefighting formulations as soon as possible. This transition will require that existing firefighting systems that have contained per- and polyfluoroalkyl substance (PFAS)-based agents be cleaned before use with next-generation agents. Towards this end, projects are sought to demonstrate and validate environmentally sustainable methods to clean firefighting delivery systems in aircraft hangars or on firefighting vehicles. Also of interest are demonstrations of environmentally acceptable treatment of any rinsate or residue derived from the cleaning process.

Initial demonstrations should be planned for laboratory-scale surrogate systems. Each proposal should contain a costed optional task for a final demonstration using a government-furnished Aircraft Rescue and Firefighting (ARFF) vehicle. Proposals should include a detailed description of the analytical methods planned to demonstrate successful cleaning and the disposal method proposed for any rinsate or residue.

Proposals may address either methods for cleaning delivery systems or treating rinsate or residue, or a combination of the two.

**BACKGROUND**

Aqueous Film Forming Foam (AFFF) is a water-based foam used by the military since the 1970s for fire suppression in ships, shore fixed systems, aircraft hangars, and to extinguish liquid fuel fires. AFFF mixtures containing significant quantities of perfluorooctane sulfonate (PFOS) and related perfluoroalkyl compounds were in use until 2002, when production was halted. Recently, AFFF formulations based on six carbon perfluorinated chains have been implemented. While these compositions are assumed to reduce the risk to the environment and human health, they still contain fluorine and are expected to be eliminated from future fluorine free alternatives.

The DoD has about 1350 foam delivery systems in aircraft hangars and about 3000 foam delivery systems on firefighting vehicles. A recent [Congressional Budget Office report](#) estimates that the cost for replacing or cleaning DoD dispensing equipment in aircraft hangars and firefighting vehicles could be ~\$2.1 billion. The estimates could be higher if the costs associated with decontamination rise. Development of a method to remove all trace elements of the current firefighting agent from its existing systems, thereby eliminating the need to replace equipment, would be an enormous cost savings for the DoD.

Proposers should refer to [current SERDP projects](#) addressing treatment of investigation-derived waste to minimize duplicative efforts.

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