



DEPARTMENT OF THE AIR FORCE  
UNITED STATES AIR FORCES IN EUROPE

OCT 9 2007

MEMORANDUM FOR SEE DISTRIBUTION

FROM: HQ USAFE/A7  
Unit 3050 Box 10  
APO AE 09094-5010

SUBJECT: USAFE Policy for the Elimination of Aqueous Film Forming Foam (AFFF)  
Containing Perfluorooctane Sulfonate (PFOS)

1. The attached policy provides USAFE installations with guidance on identifying and disposing of AFFF containing PFOS. Installations should implement the elements of the policy to ensure elimination of this product and the financial and operational risks associated with it.
2. If you have any questions, please contact me or have your staff contact Mr. Paul Mehaffey, HQ USAFE/A7AVQ, at DSN 480-6382, commercial 49-6371-47-6382, or paul.mehaffey@us.af.mil.

  
DAVE C. HOWE  
Colonel, USAFE  
Deputy Director, Installations & Mission Support

Attachment

USAFE Policy for the Elimination of Aqueous Film Forming Foam (AFFF) Containing  
Perfluorooctane Sulfonate (PFOS)

Distribution:

31 FW/CC	39 ABW/CC	48 FW/CC	52 FW/CC
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65 MSG/CC	100 MSG/CC	420 CES/CC	421 CES/CC
422 CES/CC	423 CES/CC	425 CES/CC	435 CEG/CC
712 CES/CC			

Headquarters USAFE Policy  
For  
Management/Elimination of Aqueous Film Forming Foam containing Perfluorooctane  
Sulfonate (PFOS AFFF)  
October 2007

1. Introduction.

1.1. Purpose. Provide instructions to manage/eliminate PFOS AFFF from mobile fire fighting equipment (i.e. fire trucks and trailers), fixed facility fire suppression systems, and associated storage areas.

1.2. Background.

1.2.1. All AFFF contains fluorinated surfactants which provide characteristics of low surface tension and high spreading ability. These characteristics allow a foaming action to form on the surface of flammable fuel products and thus smother fires. The 3M Corporation (3M) manufactured AFFF with fluorinated surfactants known as PFOS. (Note: All other manufacturers use a telomerization process during manufacturing and their foam surfactants do not contain, or degrade into, PFOS.) 3M stopped manufacturing AFFF in calendar year 2000 due to toxicity issues and the propensity for PFOS to bioaccumulate. However, due to a long shelf life, much of the 3M product is still in use or stored in warehouses.

1.2.2. Fire fighting training operations in Oct 06 at a USAFE installation in the United Kingdom (UK) involved the use of 3M AFFF. This resulted in an estimated 1M gallons of contaminated water in the storm drain. The UK Environmental Agency (EA) sent a letter to the RAF Station Commander citing the Water Resources Act of 1991 and seeking assurance the contaminated water would not be released to the environment until treated. Hence, the base contracted to treat the water at an estimated cost of \$140K. Any use of PFOS AFFF in the UK will result in similar operational and financial impact.

1.2.3. European Union (EU) Directive on the Marketing and Use of PFOS (EU Directive 2006/122/EC, 12 Dec 06) allows use of existing stockpiles of PFOS AFFF until 2011. However, disposal restrictions and clean up costs, such as those experienced in the UK, may result in significant mission impacts.

1.2.4. Non-PFOS AFFF is commercially available and already in use to meet mission requirements.

2. Applicability and Scope. This policy applies to all U.S. Air Force-owned fire fighting equipment which uses or contains AFFF and operates on USAFE installations located within EU countries. USAFE activities in non-EU member countries (e.g., Turkey and Norway) should implement this policy as it is deemed to be in the best interest of the

command. Installations may adopt stricter requirements if required by host nation or local regulations.

### 3. Responsibilities.

#### 3.1. HQ USAFE Hazardous Materials Management Process (HMMP) Team.

3.1.1. Provides direction on overall policy and reviews suggested changes.

3.1.2. Monitors progress of policy implementation within USAFE and reports status to HQ USAFE Environmental, Safety, and Occupational Health Council (ESOHC) as necessary.

3.1.3. Crossfeeds information to HQ USAF and other major commands.

#### 3.2. HQ USAFE Environmental Branch (HQ USAFE/A7AV).

3.2.1. Ensures adequate funding for sampling and disposal of PFOS AFFF is available for the installations.

3.2.2. Works with Defense Reutilization and Marketing Service (DRMS) to insure waste AFFF is disposed in a cost effective and timely manner.

#### 3.3. HQ USAFE Readiness Division (HQ USAFE/A7X).

3.3.1. Provides necessary direction to installation fire departments to implement this policy.

3.3.2. Provides adequate funding to procure replacement AFFF.

#### 3.4. Installation ESOHC.

3.4.1. Certifies installation as having complied with all requirements in this policy.

3.4.2. Ensures manpower and funding needs are met to implement this policy.

#### 3.5. Installation HMMP Team.

3.5.1. Implements this policy at the installation and reports status to the installation ESOHC and HQ USAFE HMMP Team as necessary.

3.5.2. Identifies funding, manpower, or other implementation impediments to the ESOHC or to applicable functional chain of command.

3.5.3. Prepares and submits certification of installation's status as having completed all requirements in this policy to the ESOHC.

### 3.6. Installation Environmental Function.

3.6.1. Assists installation fire department in identifying PFOS AFFF sources.

3.6.2. Works with installation fire department and Civil Engineer (Asset Management) Operations to coordinate sampling and disposal of PFOS AFFF.

3.6.3. Establishes a target date for the installation to accomplish all requirements in this policy and reports progress to the ESOHC.

### 3.7. Installation Fire Department.

3.7.1. Leads effort to identify PFOS AFFF sources for non-facility systems.

3.7.2. Ensures adequate stock of non-PFOS AFFF is on hand prior to change out of PFOS AFFF.

3.7.3. Performs necessary change out requirements IAW procedures established in this policy.

3.7.4. Ensures for non-emergency requirements only non-PFOS AFFF is used.

3.7.5. Will not purchase or accept any PFOS AFFF.

### 3.8. Installation Civil Engineer (Asset Management) Operations.

3.8.1. Leads effort to identify PFOS AFFF in fixed facility systems.

3.8.2. Performs necessary change out requirements IAW procedures established in this policy.

## 4. AFFF Identification Procedures.

4.1 All equipment and storage locations with AFFF will be investigated.

4.2 Records, including Material Safety Data Sheets (MSDS), procurement documents, and manufacturer/equipment installer documents will be reviewed to initially determine presence of PFOS AFFF on the installation. Note that MSDSs do not always list PFOS as a component of AFFF.

4.3 A visual inspection of all containers used for storage of AFFF will be performed. Containers will be categorized and marked as "Non-PFOS AFFF," "PFOS AFFF," or "Unknown PFOS Content." All previously opened containers or containers without factory seals will be considered unknown PFOS content until further investigation is concluded. Containers will be segregated based upon this determination.

4.4. Fire trucks and trailers and fixed facility systems containing AFFF will be sampled IAW the sampling procedures of this policy.

4.5. Samples will be taken of unknown PFOS content product in sufficient numbers to verify the absence or existence of PFOS. Installations should sample based on the number of different manufacturers, storage locations, and age of product. All containers from 3M will be sampled or deemed to be PFOS AFFF. In the event no containers bearing 3M Corporation markings are identified, confirmatory samples will be made from typical containers. Samples will be collected and handled in accordance with procedures set by certified laboratories chosen to test for PFOS.

4.6. An economic analysis should be performed to ensure sampling costs do not exceed disposal costs. It may be more cost effective to dispose of limited quantities of unknown PFOS content material rather than paying costs associated with sampling and analysis.

4.7. When equipment sampling or records review has determined the product to contain PFOS, the AFFF will be drained from the equipment and containerized. These containers will be marked "PFOS AFFF" and will be segregated and secured to prevent accidental reuse.

4.8. Containers with PFOS AFFF will be collected and processed for disposal through the installation hazardous waste (HW) program.

5. Resupply. After identification results have been received, the installation shall procure enough non-PFOS material to replace what is needed to replenish equipment and on-hand storage requirements. Disposal of PFOS AFFF should not be accomplished until sufficient supplies of non-PFOS product are received.

## 6. Removal Procedures.

6.1 Ensure sufficient containers are on hand to contain the full amount of material to be disposed.

6.2. Conduct operational risk assessments as appropriate prior to draining. Ensure equipment, conditions, and locations are suitable to prevent loss of material to the environment. Ensure potential drainage points in the vicinity are stopped/blocked and sufficient spill response materials are on hand.

6.3. Implement sound techniques for effectively containing released material in the event of a spill (e.g., catchment basins, plastic sheeting, etc).

6.4. Drainage of equipment must be made at the lowest point of the system to maximize removal of AFFF. If the drain point is above other piping or components, efforts must be taken to remove and drain such components after draining of the system

is complete or use rinsing to remove the AFFF to prevent cross-contamination. Draining will continue as long as feasible to maximize product removal.

6.5. Rinsing of the equipment will be accomplished to remove small pockets of AFFF from the system. Once the system has been allowed to drain sufficiently, 5 to 10 gallons of water will be slowly poured into the high point of the system and drained. Clean-up/rinsing activities should use low flow streams of water to inhibit foam buildup. Care must be taken to ensure drainage points are secured prior to re-filling.

6.6. All containers will be marked "PFOS AFFF" and will be segregated and secured to prevent accidental reuse. All spills will be cleaned up and contaminated materials will be collected and containerized. Containers will be collected and processed through the installation HW program.

7. Disposal will occur through normal HW channels or through contracts specifically developed/implemented by the installation for this effort. Dilute rinsate, if extensive rinsing is deemed necessary by an installation, will be disposed in a manner most beneficial to the Air Force (e.g., through HW disposal procedures or wastewater treatment).

8. Certification. The installation ESOHC, through meeting minutes or official memo, will transmit a declaration stating the installation's compliance with the requirements of this policy to the HQ USAFE HMMP Team who will subsequently cross feed the information and report it to the USAFE ESOHC.

9. Follow-Up Efforts.

9.1. If at anytime after declaring the installation as completing all requirements of this policy, more PFOS AFFF is discovered, the base will reaccomplish the processes and certifications specified in this policy.

9.2. Education efforts will be implemented to prevent future contamination of systems from PFOS AFFF from any old material brought onto or discovered on base.