PFOS/PFOA FREQUENTLY ASKED QUESTIONS

As of July 2019

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General PFOS/PFOA

Q. What are Perfluorooctane sulfonate (PFOS) and Perfluorooctanoic acid (PFOA)?

A. PFOS and PFOA are synthetic fluorinated organic chemicals used in many industrial and consumer products such as nonstick cookware, stain-resistant fabric and carpet, some food packaging and specialized firefighting foam, including Aqueous Film Forming Foam. AFFF is highly effective for extinguishing petroleum-based fires, and is used by the armed services, commercial aviation and industry.

Q. Why is PFOS/PFOA being discovered on BRAC and active installations?

A. In 1970, the Air Force began using a legacy formula of Aqueous Film Forming Foam which contained PFOS and PFOA to extinguish petroleum fires, commonly associated with burning aircraft. AFFF is the most efficient extinguishing method for petroleum-based fires and is widely used across the firefighting industry, to include all commercial airports, to protect people and property. The Air Force replaced legacy AFFF in all emergency response vehicles and stockpiles with an alternative formula in 2018, and will replace legacy AFFF in all hangar fire prevention systems in 2019.

Q. How many Air Force locations have had PFOS/PFOA releases?

A. The Air Force identified approximately 200 installations in the U.S. (active, Reserve, Air National Guard and BRAC) where AFFF may have been released due to past mission activities, and is conducting site inspections to confirm if releases occurred.

PFOS/PFOA

Q. Is it true the Air Force has known for decades that PFOS/PFOA are dangerous to humans?

A. We depend on the EPA and the Department of Health and Humans Services Agency for Toxic Substances and Disease Registry to determine potential threats and impacts to human health and the environment for emerging contaminants. In 1999, the EPA began investigating PFOS and did the same for PFOA in 2000. It wasn't until 2009 however, that EPA accumulated sufficient information to issue its first provisional health advisory for the PFOS and PFOA.

From 2009 to date, the Air Force responded to the EPA 2009 provisional advisories and the lifetime health advisory for drinking water by initiating the CERCLA process to protect drinking water where Air Force AFFF releases potentially occurred.

Q. Did the Air Force conduct studies on perfluorinated chemicals in the 1970s and 1980s?

A. Those studies – a small number (10-15) between 1979 and 1995 – were risk assessments associated with how Airmen should safely handle materials in their work.

Air Force Response to PFOS/PFOA in drinking water

Q. How is the Air Force addressing PFOS/PFOA on BRAC and active installations?

A. We are using a comprehensive approach to identify AFFF releases, respond to drinking water above the EPA lifetime health advisory impacted by an Air Force release of AFFF, and prevent uncontrolled AFFF discharges for system testing and training.

Q. What is the Air Force's response strategy for PFOS/PFOA?

A. The Air Force response strategy for PFOS/PFOA has three lines of effort: protecting human health, communication and collaboration, and a whole-of-government approach to address this national issue.

> **Line of Effort #1: Protect Human Health:** Air Force investigation work and response actions follow CERCLA, also known also as Superfund.
>
> **Identify** – Preliminary Assessments are conducted to identify potential AFFF storage, usage and releases. Site Inspections are being conducted to determine if AFFF was released to the environment and if human drinking water has been, or may be, impacted. The Air Force tested on-base drinking water to evaluate for PFOS/PFOA exceedance of EPA's LHA.
>
> **Respond** – We are responding to PFOS/PFOA above the EPA's LHA in drinking water and pathways to human receptors impacted by an Air Force release of AFFF.
>
> **Prevent** – We have replaced AFFF with a more environmentally responsible material at all our locations, and we no longer allow uncontrolled AFFF discharges for system testing and training. In the event of a discharge, we respond as if it were a hazardous material spill.
>
> **Line of Effort #2: Communication and Collaboration:** The Air Force recognizes that transparent and consistent communication and collaboration with federal, state, and local stakeholders is necessary to address the complex national issue of PFOS/PFOA contamination. As we gather data to develop informed solutions, we actively work with the community partners, advisory boards, regulators, and other local, state, and federal stakeholders to get their input, work through specific issues, and collaboratively implement our PFOS/PFOA program.
>
> **Line of Effort #3: Whole of Government Approach:** We recognize that a whole of government approach is needed to address what has become a national issue requiring extensive interagency coordination. The intended outcome is to identify unified solutions to PFOS/PFOA challenges through interagency relationships.

Q. What is CERCLA?

A. Congress established the Comprehensive Environmental Response, Compensation, and Liability Act — also known as Superfund 1980 in response to risks to human health and the environment posed by contaminated sites. CERCLA is a complex, multi-phase process. The process promotes accountability, community involvement and long-term protectiveness. The goal of CERCLA is to protect human health and environment by cleaning up sites.

The CERCLA process depends on regulatory standards to fully identify and resolve contamination. Without established standards, federal and state agencies are often unable to use taxpayer dollars to investigate and respond to undefined contamination, and regulatory agencies lack the ability to enforce action.

Q. What is the difference between groundwater and surface water?

A. The water on the Earth's surface—surface water—occurs as streams, lakes and wetlands, as well as bays and oceans. Surface water also includes the solid forms of water— snow and ice.

The water below the surface of the Earth is groundwater. The vast majority of underground water occupies the spaces between soil and rock particles. At a certain depth below the land surface, the spaces between the soil and rock particles can be totally filled with water, resulting in an aquifer. (Source: USGS)

Q. What is the Air Force doing when it finds groundwater or surface water contaminated with PFOS/PFOA?

A. As part of the CERCLA process step: Site Inspection, the Air Force determines if PFOS/PFOA is above the EPA's lifetime health advisory, identifies human drinking water sources in proximity that may be adversely impacted, and evaluates if PFOS/PFOA will likely impact human drinking water. We are responding to PFOS/PFOA above the EPA's LHA in human drinking water impacted by an Air Force release of AFFF.

Q. How is the Air Force responding to regulator requests for PFOS/PFOA sampling at former and active installations?

A. Regulatory agency requests for environmental sampling for PFOS/PFOA by are addressed on a case-by-case basis. The Air Force is performing Site Inspections that include sampling to determine the presence of PFOS/PFOA.

Q. How does the Air Force respond if they are the water purveyor?

A. Where the Air Force is the water purveyor, the Air Force tested drinking water supplies for PFOS/PFOA. Where sample results exceed the EPA's lifetime health advisory of 70 parts per trillion, we provide alternate drinking water. Additional response actions may include communicating with local regulators and drinking water officials, proper consumer notification, and evaluation of options to reduce PFOS/PFOA concentrations below the EPA's LHA.

Q. What about other per- and polyfluoroalkyl substances (PFAS)?

A. We comply with all applicable federal and state environmental cleanup laws and regulations to the extent authorized and required by Federal law. If properly promulgated standards exist for other PFAS, we'll take appropriate action if Air Force mission activities contributed to PFAS contamination.

Q. How are you prioritizing site inspections? It seems some installations are much further along in the process than others?

A. After conducting preliminary assessments at approximately 200 installations, the Air Force determined that site inspections were needed at 189 installations. Due to limited funding and resources, we couldn't conduct all 189 site inspections simultaneously. Our site inspection schedule and prioritization is based on potential risk to drinking water consumed by humans; depth to groundwater; groundwater flow direction; and proximity to base boundaries.

Cleanup

Q. Why not just start cleanup and fix the root of the problem?

A. Our first priority is protecting human drinking water because drinking water is a direct pathway to human consumption. The EPA has established a lifetime health advisory level for PFOS/PFOA in drinking water, but there are currently no nationwide cleanup standards for PFOS/PFOA. Using the CERCLA process, the

Air Force is conducting site inspections to confirm if releases occurred, identify human drinking water sources that may be adversely impacted, and evaluate if a release will likely impact human drinking water.

Q. Why is this taking so long?

A. We are working as quickly as we can - while following a multi-step processes - to address human drinking water impacted by our firefighting mission. We identified 203 installations requiring preliminary assessments, the first phase of the CERCLA process, and 202 of the 203 preliminary assessments have been completed. We identified 189 installations to move forward into a site inspection, the second phase of CERCLA. As of June 2019, 78 percent of the SIs are completed.

Throughout the process, we respond immediately when we identify drinking water above EPA's LHA as a result of our mission. As of the end of the second quarter of fiscal year 2019, we have spent more than $357 million identifying, responding to and preventing PFOS and PFOA contamination in drinking water supplies on and around active and former installations.

Q. When will the contamination be cleaned up?

A. Our first priority is protecting drinking water sources because drinking water is a direct pathway to human consumption. The long-term solution for addressing the contamination will be through the CERCLA process to investigate the extent of the contamination, evaluate risk, and determine response actions. This process includes other federal and state regulator coordination and public involvement.

Q. So you're not cleaning it up?

A. The CERCLA process will include determining the response actions for PFOS/PFOA. Our immediate focus is identifying and responding to drinking water above the EPA's LHA for drinking water as a result of our mission. The long-term solution for addressing the contamination will be through the CERCLA process to investigate the extent of the contamination, evaluate risk, and determine appropriate response actions. This process includes other federal and state regulator coordination and public involvement

Q. Once you are done addressing drinking water, will you begin cleanup of groundwater?

A. The long-term solution for addressing the contamination will be through the CERCLA process to investigate the extent of the contamination, evaluate risk, and determine response actions. This process includes public involvement.

Q. How long could cleanup take?

A. The time it takes to complete a site's environmental restoration depends on many factors, including the risk it poses to human health and the environment, the volume and location of the contamination, and the selected cleanup solution.

The CERCLA process involves investigating the extent of the contamination, evaluating risk, and determining response actions. This process includes public involvement. The long term response actions can take many years to accomplish and many factors will be considered in the final solution.

Q. Is there a way to accelerate the restoration of the groundwater?

A. The process for determining the need for and level of cleanup required to protect human health and the environment is a process set forth by federal law and regulation (i.e., CERCLA). PFOS/PFOA are emerging contaminants and limited technologies are available at this time to restore the groundwater. DoD and the Air Force are working to identify innovative technologies and methodologies through various research programs for better, faster and more sustainable environmental solutions.

Q. How will cleanups be prioritized?

A. Under CERCLA and DoD, installation work sequencing is based on "worst first", meaning that potential risk to human drinking water is given priority. We also use ratings of relative risk to human health, human safety and the environment when sequencing projects.

Q. What is risk?

A. Risk is defined as the likelihood of adverse health effects arising from exposure to a hazard. Health risks are a measure of the chance that you will experience health problems. Risk is the product of two factors: the probability of exposure and the severity of the consequences.

Q. What is a risk assessment?

A. Per CERCLA / National Contingency Plan, a baseline risk assessment is the process to characterize the current and potential threats to human health and the environment that may be posed by contaminants migrating in the environment and bio accumulating in the food chain. The primary purpose of the baseline risk assessment is to provide risk managers with an understanding of the actual and potential risks to human health and the environment posed by the site and any uncertainties associated with the assessment. (NCP, Section 300.430(d)(1)).

Investigation/Response Actions Cost

Q. It's been reported that the DoD plans to spend $2 billion to clean up PFOS/PFOA-contaminated water. Is that an accurate estimate?

A. In March 2019, the Deputy Assistant Secretary of Defense, told lawmakers that cleaning up bases contaminated with PFOS/PFOA would cost about $2 billion. For more information about those estimates, contact Office of the Secretary Defense Public Affairs at 703- 697-5131.

Q. Does the Air Force cover the cost of maintaining water filters overtime?

A. If we have installed filters on private wells because Air Force activities are a source of the contamination, we will maintain those filters until they are no longer necessary or a long-term alternative can be implemented. If the Air Force installs filters on public wells, public water systems will assume ownership, operation and maintenance of the filters after a period of Air Force maintenance to ensure proper operation.

Testing Method

Q. How does the Air Force test for PFOS/PFOA in drinking water?

A. The Air Force uses EPA Method 537 to test samples from finished drinking water supplies. Information about EPA Method 537 can be found on the EPA website.

Well Sampling/Results

Q. What will happen if my private well is found to have levels of PFOS/PFOA above the EPA's lifetime drinking water health advisory level due to PFOS/PFOA that have migrated off the installation?

A. The Air Force's priority is protecting human health and drinking water sources. If the Air Force samples your drinking water well and determines the PFOS/PFOA level is above the EPA's drinking water LHA, the Air Force will implement response actions to provide alternate drinking water. This may include

supplying your household with bottled drinking water, connecting your home to a municipal drinking water supply, or installing a treatment/filtration system on your private well.

Q. Who will decide what the long-term solution will be?

A. We will work closely with each affected well owner to determine the most appropriate long-term solution.

Q. What if I don't want to be connected to a municipal drinking water supply?

A. We will work individually with each affected well owner to determine the most appropriate long-term solution to providing an alternate source of drinking water, which will include discussing residential concerns regarding permanent response actions and options.

Q. My well sampling yielded results below the EPA's LHA—how can the Air Force know that won't change? Will they continue sampling?

A. When PFOS/PFOA are detectable but below the EPA's LHA level in drinking water, we may conduct well monitoring as needed for trend analysis and determine if further action is needed.

Q. Will the Air Force test my well?

A. We are taking a proactive, measured approach to sampling off-base wells. During the site inspection phase, we will identify wells to sample based on probability of contamination, proximity to contaminant areas and possible pathways from the site of contamination to the drinking water wells. If the site inspection indicates your well might be impacted, we could then sample the well.

Q. I live near an installation; why won't the Air Force sample my well?

A. Your well might not be in an area where there is a probable cause that drinking water has been impacted by mission activities. We use data and site information to map contaminant migration and potential pathways to drinking water. Doing so allows us to focus sampling efforts in the locations potentially impacted.

Q. Can you provide a map of sampling area outside the base?

A. We can describe sampling areas in general terms using major boundaries, such as roads, but we cannot share specific property locations due to privacy concerns.

Q. Can you provide the results of drinking water samples taken off base?

A. We can't release results for specific wells – that information belongs to the well owner – but we can provide a range of PFOS/PFOA contamination levels detected.

General Water Use

Q. Can I cook, bathe and brush my teeth with water tested above LHA?

A. The EPA LHA is specific to the human consumption of drinking water. According to the EPA, water is safe for activities that do not include consumption, such as bathing, doing laundry and washing dishes. For more information, contact the EPA or your local and state health department.

Q. Will my pets be contaminated if they drink water tested above LHA?

A. The EPA LHA is specific to the human consumption of drinking water. For more information, please refer to the EPA.

Q. Can I breathe in PFOS/PFOA or absorb through my skin through the dirt and/or wind?

A. The EPA LHA only applies to exposure scenarios involving human consumption of drinking water. For additional health specific information, please refer to the EPA, your medical provider or your local and state health department.

Health Concerns

Q. Are there health effects from PFOS and PFOA?

A. According to the Agency for Toxic Substances and Disease Registry, some scientific studies suggest that certain PFAS may affect different systems in the body. ATSDR is working with various agencies to better understand how exposure to PFAS might affect people's health—especially how exposure to PFAS in water and food may be harmful. For more information, visit https://www.atsdr.cdc.gov/pfas/index.html.

Q. Can PFOS and PFOA cause cancer?

A. According to the ATSDR, some, but not all, studies in humans with PFAS exposure have shown that certain PFAS may increase the risk of cancer. Scientists are still studying the health effects of exposures to mixtures of PFAS. For more information, visit https://www.atsdr.cdc.gov/pfas/index.html.

Q. Is it safe to drink water with PFOS and PFOA below the EPA lifetime health advisory?

A. EPA's LHA was calculated to offer a margin of protection against adverse health effects to the most sensitive populations: fetuses during pregnancy and breastfed infants. The LHA is calculated based on the drinking water intake of lactating women, who drink more water than other people and can pass these chemicals along to nursing infants through breastmilk. For more information, visit https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos or talk to your local health department or physician.

Non Drinking-Water Concerns

Q. Will eggs, milk, fruits, vegetables and meat from farms using water above LHA contain a significant amount of PFOS/PFOA to be concerned?

A. The EPA LHA only applies to exposure scenarios involving human consumption of drinking water. They are not appropriate for use in identifying risk levels for ingestion of food sources, including fish, meat produced from livestock that consumes contaminated water, or crops irrigated with contaminated water. For more information, contact the EPA, the FDA, the USDA or your local and state health department.

Q. Will livestock, fruits and vegetables still be considered organic?

A. Please contact the U.S. Department of Agriculture for questions about organic certification.

Q. What about surface water? How does this impact fishing and crabbing?

A. The EPA LHA only applies to exposure scenarios involving human consumption of drinking water. They are not appropriate for use in identifying risk levels for ingestion of food sources, including: fish, meat produced from livestock that consumes contaminated water or crops irrigated with contaminated water. For more information, contact the EPA or your local and state health department.

Q. What is the Air Force doing about PFOS/PFOA in lakes and lake foam?

A. The EPA LHA only applies to exposure scenarios involving human consumption of drinking water. They are not appropriate for use in identifying risk levels for other exposure scenarios, including contact with lake foam. The Air Force is focused on responding to and preventing drinking water contamination and we defer to the proper health agency experts on exposures other than drinking water.

Regulations/State Laws

Q. What is the Air Force doing about potential food contamination?

A. The U.S. Food and Drug Administration (FDA) oversees the safety of foods through the assessment of potential exposure and risk. The Department of Defense does not have the expertise nor authority to conduct a food safety investigation, or to develop a food-specific interim health-based guideline.

Q. Will the Air Force follow lower health advisory levels passed by states?

A. The Air Force complies with state environmental cleanup laws to the extent authorized and required by Federal law.

Q. Will the Air Force fund a study on the health effects of people exposed to PFASs in drinking water?

A. The Air Force relies on the Agency for Toxic Substances and Disease Registry (ATSDR), under the Department of Health and Human Services (DHHS), for guidance on health based actions.

The Centers for Disease Control and Prevention (CDC) and the ATSDR will be conducting exposure assessments in communities near current or former military bases and that are known to have had PFAS in their drinking water. The primary goal of these exposure assessments is to provide information to communities about levels of PFAS in their bodies. This information will also be used to help inform future studies evaluating the impact of PFAS exposure on human health. People in each of these communities will be randomly selected to participate in these exposure assessments. CDC/ATSDR will start work on the exposure assessments in 2019 and anticipates they will continue through 2020. For more information, visit https://www.atsdr.cdc.gov/pfas/PFAS-Exposure-Assessments.html.

Q. Do you have any information about or a comment on the ATSDR Health Studies?

A. For specifics on ATSDR Health Studies, please reach out to the Agency for Toxic Substances & Disease Registry at 770-488-0700.

PFOS/PFOA contamination of drinking water is an urgent national issue. The Air Force has moved aggressively to protect human health and drinking water supplies connected to and affected by our installations.

The Air Force has numerous initiatives ongoing toward protecting people from exposure to PFOS/PFOA in drinking water at levels above EPA's lifetime health advisories. PFOS/PFOA are chemicals that were used in many industrial and consumer products, such as nonstick cookware, stain-resistant fabric, some food packaging, and specialized foam. This is a national issue that requires a whole-of- government response to fully address health effects and issues regarding food safety and agriculture commodities. The Air Force is proud to be a leader in this effort, and we will continue to work with our neighbors, regulators and elected officials to protect human health and our environment.

Q. Will the Air Force pay for blood testing for individuals who live in areas impacted by PFOS/PFOA that have migrated off base?

A. The Air Force does not have authority to pay for blood tests. The Air Force relies on the Agency for Toxic Substances and Disease Registry, under the Department of Health and Human Services (DHHS), for guidance on health based actions.

Reimbursements/Claims

Q. Will the Air Force pay for my drop in property value?

A. Residents who believe they have incurred damages because of Air Force actions or activities may submit a claim to the base's legal office. The claim will be adjudicated in accordance with Air Force claims procedures and Federal law.

Q. Why have some claims been denied?

A. We can't speak to specific details of denied claims.

Generally speaking, however, the Air Force may only pay claims when there is a legal obligation to do so. Under the Federal Tort Claims Act the claimant must demonstrate that their injury was caused by a negligent act(s) of the Air Force or one of its employees. In addition, the negligent act must also violate a law, regulation or practice of the applicable agency.

Q. Will the Air Force reimburse communities for costs incurred in dealing with contamination issues?

A. Where the Air Force is responsible, we will implement appropriate response actions to ensure impacted residents have drinking water available that meets the EPA's LHA for PFOS/PFOA in drinking water. However, the Air Force does not have the legal authority to retroactively reimburse communities for costs incurred in dealing with PFOS/PFOA. Where we have factual data acknowledging contamination is attributable to Air Force activities, the Air Force has the authority, under the Defense Environmental Restoration Program, to enter into prospective agreements with a state/local government entity to obtain its services to assist the Air Force in meeting its obligations.

Aqueous Film Forming Foam (AFFF)

Q. What is AFFF?

A. Aqueous Film Forming Foam, or AFFF, is a firefighting agent used commercially and by the Department of Defense, including the Air Force. Most commonly used to combat petroleum fires in aircraft accidents, hangars and during live-fire training exercises, a legacy formulation of AFFF contained perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) - two perfluorinated compounds that persist in the environment and are not known to degrade by any natural process. The EPA has classified these compounds as emerging contaminants due to inconclusive human health risks, evolving regulatory standards and ongoing scientific investigations about the contaminants.

Q. Why didn't the Air Force immediately stop using AFFF after the health concerns regarding PFOS/PFOA came to light?

A. It was not until November 2015 that there was a more environmentally responsible firefighting foam option available on the DoD's qualified products list for firefighting agents. With the identification of this effective substitute, we began replacing our inventory of legacy AFFF to this more environmentally responsible version.

Q. Why doesn't the Air Force just use PFOS/PFOA free foam?

A. AFFF agents that contain some form of PFOS/PFOA or related fluorosurfactants are the most effective foams currently available to fight petroleum-based fires. They provide rapid extinguishment, burn-back resistance and protection against vapor release.

Foam manufacturers are transitioning to the use of more environmentally responsible formulas that do not contain long-chain perfluorinated compounds. These short-chain formulas are low in toxicity and not considered bio-accumulative or bio-persistent.

AFFF Replacement Program

Q. When did the Air Force begin eliminating PFOS-based AFFF?

A. In 2007, U.S. Air Force locations in Europe began replacing PFOS-based AFFF in both mobile and fixed systems with European-Union-approved AFFF after the European Parliament and the council of the European Union issued a directive restricting the use of PFOS-containing substances.

In March 2011, the Air Force Civil Engineer Center initiated an informal plan for Air Force fire chiefs to dispose of "excess" PFOS-based AFFF Air Force-wide over a 10-year period. In November 2015, more environmentally responsible formulas were added to the DoD's qualified products list for firefighting agents. We began replacing both PFOS-based and other legacy AFFF products with a new, environmentally responsible formula in August 2016.

Q. What type of replacement foam will be used and how effective is it?

A. The Air Force awarded a $6.2 million contract to ICL Performance Products for 418,000 gallons of Phos-Chek 3 percent, six carbon chain AFFF. Delivery began in August 2016 and was completed in May 2017. The new formula meets both MILSPEC requirements for firefighting and the goals of the EPA 2010/15 PFOA Stewardship Program.

Q. How is the new Aqueous Film Forming Foam (AFFF) different from the legacy AFFF?

A. The legacy AFFF formula contains long-chain fluorosurfactants while the new formula contains shorter chain molecules. Data reviewed by the EPA in 2009 suggests these shorter-chain formulas are less toxic because the chemicals are cleared from the body faster and are not considered bio-accumulative or bio- persistent. The new formula meets both military specifications for firefighting and the goals of the EPA's 2010/15 PFOA Stewardship Program.

Q. When will legacy AFFF be out of the Air Force's inventory?

A. We completed the replacement of legacy AFFF in all emergency response vehicles in June 2018. We expect to replace AFFF in all hangar fire prevention systems by the end of 2019. Unlike mobile fire trucks, AFFF in hangars are contained to a stationary location — a more controlled environment.

Q. Is the Air Force replacing AFFF anywhere other than hangars and fire trucks?

A. Some installations may have put the new AFFF bench stock in trailers or overhead storage tanks but we have reduced the backup requirement. All legacy AFFF has been removed from vehicles and bench stock to include any fire department storage containers.

Q. How is the AF disposing of AFFF?

A. We drain and collect the legacy AFFF from fire vehicles then triple rinse the vehicle foam tanks and collect the effluent. The legacy AFFF and effluent is then sent to an authorized disposal facility for Incineration. The incineration disposal method is currently the most environmentally safe way to eliminate the health and environmental risks associated with AFFF.

Q. Has the Air Force considered using firefighting foam made with non-fluorinated chemicals? If so, which ones?

A. To date, no non-fluorinated AFFF formulation has met the MILSPEC performance criteria necessary to safeguard our Airmen from real time fire emergency responses. Additionally, AFFF agents that contain some form of PFOS/PFOA or related fluorosurfactants are the most effective foams currently available to fight petroleum-based fires. They provide rapid extinguishment, burn-back resistance and protection against vapor release.

AFFF Replacement in Hangars

Q. When will hangar foam replacement be complete?

A. Replacement projects of all legacy AFFF in our hangars are funded and underway at our active, reserve and ANG installations; expected completion date is end of calendar year 2019.

AFFF Containment

Q. What are holding ponds and tanks in fire training areas used for?

A. Fire training area tanks and ponds collect burn pit effluent (foam, fuel, etc.) so it doesn't get in storm water drains. For example, retention ponds are placed at the bottom of a slope from a burn pit to catch runoff.

Q. How does the Air Force empty/dispose of AFFF-containing runoff in holding ponds, tanks and other containment methods in training areas?

A. We negotiate with local wastewater treatment plants to determine what they will receive from burn pits.

Q. What protocols does the Air Force follow for uncontained AFFF releases?

A. In the event of a discharge, we respond as if it were a hazardous material spill requiring immediate action. Installations are required to establish response procedures in accordance with National Fire Protection Standard 472. This standard defines hazardous material response requirements.

Q. What about risks of trucks leaking AFFF?

A. Our vehicular maintenance program ensures truck systems operate properly and malfunctions are quickly identified and fixed. A second line of protection from drip pans under the trucks prevents ground contamination should a leak occur.

Future AFFF Use

Q. When will the new AFFF be ready to use?

A. The new, more environmentally responsible foam is already in use across the service.

Q. How will the Air Force respond to AFFF releases once trucks are equipped with the new AFFF?

A. We will continue responding to AFFF releases as if it were a hazardous material release. We also discontinued regular fire truck system tests in July 2015 and will not resume foam-discharge tests, even with the new foam product, unless the installation has an approved containment system.

Additionally, we are retrofitting all fire trucks with a system that supports fire protection training needs and is environmentally friendly. The new system bypasses the tank containing AFFF and, instead, flows water through the extinguishing system and the cart, gathering data readings and discharging water from the vehicle's turret. As of July 2019, retrofitting approximately 850 fire trucks is 97 percent complete.

Q. At one time, there was no reason to believe that legacy PFOS-based firefighting foam was not safe. What is the Air Force doing to ensure history isn't repeated?

A. The Air Force is taking steps to guard against future contamination by replacing legacy AFFF stockpiles with a foam that reduces PFOS/PFOA exposure, Phos-Chek 3 percent, six carbon chain AFFF. The Air Force is taking additional steps to reduce or eliminate unnecessary foam releases by:

- Retrofitting all fire vehicles with a switch mechanism to test functionality without discharging AFFF into the environment.
- Standardizing hangar systems and replacing systems containing the old formulation in conjunction with building renovations.
- Conducting fire training exercises in double-lined pits to prevent soil and groundwater contamination.
- Immediately cleaning up uncontained releases.