



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Office of Airport Safety  
and Standards

800 Independence Ave., SW.  
Washington, DC 20591

**OCT 29 2018**

Dear Airport Sponsor:

This letter provides awareness of and guidance on handling the inadvertent use of Diesel Exhaust Fluid (DEF) instead of Fuel System Icing Inhibitor (FSII) in aircraft.

### **Background**

In August 2018, the Federal Aviation Administration (FAA) identified five aircraft at an executive airport as being serviced with jet fuel containing DEF. During the same period, the FAA identified nine additional aircraft as being serviced with refueling equipment that had been exposed to DEF. The fueling agent inadvertently used DEF instead of FSII on a refueling truck and injected into the fuel with the truck's FSII injection system.

DEF is a urea-based chemical and is not approved for use in jet fuel. When mixed with jet fuel, DEF will react with certain chemical components in the jet fuel to form crystalline deposits in the fuel system. These deposits will flow through the aircraft fuel system and may accumulate on filters, fuel metering components, other fuel system components, or engine fuel nozzles. The deposits may also settle in the fuel tanks or other areas of the aircraft fuel system where they may dislodge over time and accumulate downstream in the fuel system.

All of the aircraft identified in August did have documented cases of clogged fuel filters and fuel nozzle deposits that led to service difficulties and unplanned diversions.

### **Recommendations**

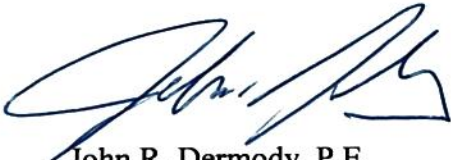
Bulk fluids are generally stored in hangars or storage areas. Both DEF and FSII are clear and are usually stored in large milky white plastic tanks ranging from 55 gallons to larger cube storage tanks. If stored close to each other, they are very hard to differentiate from each other without very pronounced markings. To prevent confusion, we recommend:

- (1) Airport operators and fueling agents do not store DEF and FSII fluids in close proximity to each other;
- (2) Airport operators and fueling agents clearly mark bulk storage tanks or barrels with 4-inch or larger stenciled letters visible from all sides. Use "DIESEL DEF" for all DEF fluid and "JET FUEL SYSTEM ICING INHIBITOR" for FSII storage containers; and

(3) Fueling agents or operators should remove jet fuel suspected of being contaminated with DEF from aircraft and discard it. Do not attempt to repurpose DEF-contaminated fuel to other aircraft or vehicles.

If you have questions, please contact Mr. Dale Williams, Office of Airport Safety and Operations, AAS-300 by email at [dale.williams@faa.gov](mailto:dale.williams@faa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "John R. Dermody". The signature is fluid and cursive, with a large initial "J" and "D".

John R. Dermody, P.E.  
Director, Airport Safety  
and Standards