
Third DEF Contamination Incident Highlights Need for Additional Training

Earlier this month, another jet fuel contamination event occurred at an FBO in Southwest Florida. This latest incident marks the third time in less than two years that Diesel Exhaust Fluid, or DEF has contaminated the fuel supply of a jet fuel truck. In all three cases, multiple in-flight engine failures occurred, with the possibility of significant damage to aircraft fuel systems and engines. Fortunately, none of these cases resulted in an aircraft crash.

Following the first contamination incident in late 2017, NATA, through its Safety Committee, reviewed the risk of jet fuel contamination with DEF and created a free DEF Contamination Prevention training course. This most recent incident, however, highlights yet again, just how serious the DEF contamination risk is, and how it is still a very real threat. FBO's and aircraft operators must be diligent in ensuring that staff are not only properly trained, but that company policies and procedures used to prevent DEF contamination are being followed.

The following Q & A highlights key information all FBOs and fuel providers should be aware of.

1. What is Diesel Exhaust Fluid (DEF) and what is it used for?

DEF is a clear liquid containing a mixture of urea and demineralized water that is used to reduce emissions in modern diesel engine vehicles. DEF is designed to be used only in 2010 or later year vehicles equipped with Selective Catalytic Reduction (SCR) systems.

2. How does DEF get into jet fuel?

Details of the latest incident are still pending, but in previous incidents, the identified risk occurs when DEF is inadvertently added to the fuel truck's Fuel System Icing Inhibitor (FSII) storage tank and then injected into the fuel.

3. What happens when DEF contaminated jet fuel is delivered to aircraft?

DEF reacts with certain chemical components in jet fuel to form crystalline deposits in the aircraft fuel system. This can lead to a very high likelihood of inflight engine failure, damage to aircraft fuel systems and engines, and represents a serious risk to flight safety.

4. What can FBO's and other fuel providers do to reduce the risk of DEF contamination?

In addition to reviewing the FAA's Office of Airport Safety and Operations, October 2018 [letter](#) on the inadvertent use of DEF instead FSII in aircraft, NATA's Safety 1st DEF Contamination Prevention training recommends the following 4 actions:

1. DEF & FSII should be stored in separate, locked locations with differently keyed locks. Keys should also be labeled and not kept on the same key ring.

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2. All staff should be trained on the locations of DEF and FSII and the differences between the packaging and labeling of the two products.
 3. Only trained and approved personnel should handle DEF or fill fuel truck DEF tanks.
 4. All FSII transfers from storage to refueling equipment FSII containers should be recorded in a dedicated log that includes
 - i. Date
 - ii. Time
 - iii. Transfer to/from
 - iv. Name of individual who completed the transfer
 5. **What should I do if I believe that aviation fuel has been contaminated with DEF?**

Currently there is no field test to check jet fuel for DEF contamination, although it has been reported the industry is working on such a test. NATA recommends that all FBO's and other aviation fuel providers work with their fuel distributor to develop a response protocol to aviation fuel contamination incidents. Such a protocol should include the training needs for FBO staff.
 6. **How can my team access the NATA Safety 1st DEF Contamination Prevention training?**
 - Companies that currently use the NATA Safety 1st program can simply assign the DEF training as they would any other course. There is no charge for the DEF training.
 - Companies that do not currently use the NATA Safety 1st program can contact us at safety1st@nata.aero for complementary access to the DEF program.

**For more information or for additional questions please contact NATA at:
safety1st@nata.aero**