

Diesel Fuel TIA #1388 Appeal

Submitted By: Michelle Hilger 10/11/2018

Within an Emergency Power Supply System (EPSS), the engine and generator are merely energy converters. **The diesel fuel is the real source of emergency power.** Since diesel fuel within an EPSS is stored for long periods of time, diesel fuel health directly affects EPSS reliability. A fuel surveillance program that includes bi-annual fuel sampling along with processes for remediation is low cost insurance to ensure EPSS reliability.

NFPA 110 editions dating back to 2005 have required only the following when it comes to diesel fuel maintenance: “A fuel quality test shall be performed at least annually using appropriate ASTM Standards.” It is important to understand that the ASTM standard most commonly referred to, ASTM D975, Specification for Diesel Fuel Oils, is the standard for **new** diesel fuel at the time and place of delivery. Testing for the ASTM standards of new fuel does not account for the degradation caused by contaminants such as microbial growth, water, and sludge. Additionally, most diesel fuels are consumed between 90 to 120 days after the refining process. There is a general understanding that diesel fuel per ASTM D975 standards has a shelf life of 12 months or less. **Diesel fuel storage in standby generator applications can easily exceed 12 months of storage.**

Between 2007 and 2014, Ultra Low Sulfur Diesel (ULSD) was introduced to non-road, locomotive, and marine (NRLM) applications. In 2014, the EPA diesel standards began requiring ULSD for all non-road, locomotive, and marine (NRLM) applications. NRLM engines and equipment must use this fuel.

In 2008, ASTM D975-08a, Standard Specification for Diesel Fuel Oils — used for on-road and off-road applications, was revised to allow for up to 5 percent biodiesel (ASTM D975-18 7.3.1.2). At this time, the Department of Energy also released information which confirmed that **ASTM D975 not only allows biodiesel concentrations of up to a B5 to be called diesel fuel, but notes that it is allowed without separate labeling required at the pump.** This means all diesel fuel can be a biodiesel blend.

The industry has seen not only a rapid change in the chemical make-up of its diesel fuel, thus affecting its longer-term storage reliability, but also a requirement to increase the amount of diesel fuel on-site to ensure a facility can remain operational throughout the course of an emergency. All of this has occurred without a change to the guidelines, particularly those affecting **stored** diesel fuel, to include best practices to ensure the reliability of this fuel source. In the safety world, when materials change, so, too, must methods and vice versa.

It is the responsibility of the industry as a whole to ensure that all components of an EPSS are fully functional and reliable. When best practices have been established and supported by large group industry experts, including major engine manufacturers, that provide a low cost, uniform maintenance guideline for the reliability of longer-term **stored** diesel fuel to effectively mitigate risk of loss of life and environmental harm, it falls on the integrity of those within the industry to implement a new standard to protect human life and the environment. It is with this responsibility, to be proactive and not reactive and to improve related codes and standards that generally lag industry change; that we are providing the means necessary to prevent a possible catastrophe.

The NFPA vision states “we are the leading global advocate for the elimination of death, injury, property, and economic loss due to fire, electrical, and related hazards.” The NFPA mission is to help save lives and reduce loss with information, knowledge, and passion. Lastly, the NFPA states that it is committed to leading the charge in building a network of intelligence to keep our increasingly complex world safe.

Our industry is requesting support in order for us all to do what is right when it comes to the reliability of diesel fuel for our emergency power supply systems. The cost of a life cannot wait another three years. **Please help our industry save lives and reduce loss by approving TIA No. 1388.**

**** Please review the below examples of the fuel problems being seen throughout our industry. We have additional evidence that we would like to provide on the diesel fuel challenges being seen within the generator industry. Due to the nature of the information, prior to sending over this documentation, we would need confirmation that the information shared would not be made public, and only reviewed by those who are involved in the approval process of the TIA. Once confirmation is received, we can submit these documents for review. ****

For diesel fuel questions or further explanation – contact Michelle Hilger at 602-510-0639 or email mihilger@gentechus.com

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Additional Supporters since the Submission of the TIA #1388

Officers of EGSA Codes & Standards Committee –

- Chair: Robert Simmons - Petra Seismic Design
- Vice Chair: Bradley Affeldt - Intertek
- Secretary: Jeff Jonas – Generac Power Systems, Inc
- Board Liaison: Steven Sappington – Caterpillar

Others –

- Ray Garza – FOI Laboratories
- Bill Diver – Bell Performance
- Alan Koch – Curtis Engine
- Travis L. Walls - Carbon Fuel Services, LLC
- Brian Hartley – Diesel Dialysis LLC
- ... more to be added once official documentation to realize names is obtained

Examples of Fuel System Challenges within On-Site Power Generation Industry –

https://www.youtube.com/watch?v=-MUWBU_OB7Q - "This is from a Healthcare Facility that had no fuel testing done to it and you can see all the sludge we pulled from it."

██████████ Fuel not being tested and customer still doesn't believe its an issue and doesn't want to spend money. Says treatments are snake oil



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Michelle Hilger replied · 1 Reply

██████████ Generator at an airport failed to start during an emergency and the Generator is serviced once a year. This is what we found in the filter.

