What Is Stored Diesel Fuel Maintenance and Why Do I Need It?

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Facilities spend 100's of thousands, or millions of dollars on emergency power system's and engine and generator maintenance to be assured that in the event of an emergency, their facility would have the power they require to continue operation without interruption.

Amazingly, the most common cause of EPS failure is dead or weak, batteries and contaminated diesel fuel. The two most inexpensive components of the entire system.

Battery maintenance is a requirement of NFPA 110 and NFPA 70. Neglecting weekly maintenance of batteries is a violation.

However, maintenance of stored diesel fuel is only covered in the Appendix of NFPA 110. Stored diesel fuel maintenance is a Recommendation, not a Requirement.

NFPA 110 refers to diesel fuel "Storage Life", 1.5 to 2 years. The Standard recommends that, "Tanks should be sized so that the fuel is consumed within the storage life, or provision should be made to replace stale fuel with fresh fuel", NFPA 110, A-5-9.1

The above recommendation to the Standard Appendix was written over 10 years ago. Due to the increased demand for distillate fuel, oil companies are now refining 85% more of a barrel of crude than they were in the early 1980's. The result of the current refining process is lower cetane levels, heavier fuel and poorer stability characteristics, a fuel more susceptible to contamination.

Recently, University of Idaho scientists conducted tests to determine the timeline and percentage of degradation of stored diesel fuel #2. The results were that petroleum diesel #2 degraded 26% after 28 days of storage. "Fuel Facts", Biodiesel Board, Jefferson City, MO.

A Report by Harold R. Martin, Cummins Engine Co., Fleetgaurd Division concluded, " The plugging contaminates in all of the field returned filters and the plugging contaminant generated in the laboratory from thermally unstable, #2 low sulfur diesel fuel were composed of 92% or greater by weight of a material that was volatile at 500°C. This indicates that the plugging material found in the field returned filters and the contaminant generated in the laboratory is organic in nature and not composed of inorganic material such as metals, corrosion products or dirt. This is consistent with what one would expect from fuel insolubles degradation products of thermally unstable diesel fuel".

A maintenance program for stored diesel fuel #2 for an EPS is not only critical, but also necessary for the proper operation of the system.