Winter Diesel Operability

As winter approaches, it is time to start thinking about winter operability and preparing for that first big temperature drop. Downtime due to cold weather-induced fuel and filter issues can be costly to your operation. Implementing a fuel quality management program can help you avoid the headaches.

Start with your storage tanks. Water and wax are held in suspension in all diesel fuel and biodiesel blends. As temperatures drop, both water and wax separate from the fuel, fall to the bottom of the tank and sometimes cause problems by restricting fuel flow and plugging filters. Draining out the free water in the bottom of the storage tank and changing the filter can help. After all, a dirty, half-clogged filter that has been doing its job is much easier to plug than a brand new one.

Using a quality cold flow improver is another way to help eliminate problems. A well-formulated cold flow improver should contain a non-alcohol based deicer component and a couple of wax-control components. FS SURE-FLO is formulated with, 1) A deicer component that suppresses the freezing point of water in the fuel and protects fuel lines and filters from freezing, often when equipment sits idle overnight, 2) A wax modifier component that keeps wax crystals from sticking together and becoming large enough to plug filters and restrict fuel flow, 3) A wax anti-settling agent that keeps the wax particles dispersed and suspended to prevent them from falling to the bottom of the tank.

For optimum performance, cold flow improvers should be mixed with fuel before temperatures start to cool down. Since cold flow improvers work by reacting with the wax crystals as they form, additives should be mixed into the fuel at 10-15 °F above the cloud point. Incorporating cold flow improvers into your fuel as soon as ambient air temperatures start dipping down to 32 °F is a good rule of thumb.

Mixing chemicals in the fuel or overtreating with cold flow improvers can also cause problems. Following treat recommendations closely and understanding if the fuel you receive is pre-treated for cold weather is important. It is recommended to discuss the condition of fuel tanks and the types of additives delivered in the fuel with your fuel supplier before you add something else on top.

In the event that equipment is down due to fuel gelling or plugged filters, rescue treatments can be used to “re-liquefy” fuels. “Reflow” available from your local FS Member Cooperative is one such product. Rescue treatments with these products can be effective, but we do not recommend long term use of alcohol based additives as prolonged exposure can lead to internal engine and fuel injector issues.

For more information regarding steps you can take to ensure better cold temperature operation of your equipment, contact your local FS Energy Specialist.