



## **Reducing compliance cost fro RCP & Subchapter M while improving safety**

**Both the Responsible Carrier Program (RCP) and United States Coast Guard 's USCG's Subchapter M (Sub M) compliance cost can be reduced and auditability be improved by implementing a fuel filter alert (FFA) system (a remote digital alarm/readout of fuel filter status).**

**The RCP and Subchapter M both refer to vessel maintenance being an important part of a TSMS program to keep vessels safer. Both the RCP and Subchapter M address auditability, the ability to verify that indeed the vessel is operating under the rules that it has implemented for itself. The current fuel filter change interval procedures most vessels run do not solve the problem of insuring clean fuel getting to the engine, can be dangerous.**

**The USCG states in the federal register that the majority of towing vessel accidents are related to human factors. Towing vessels operated pursuant to a safety management system (SMS) have an aim to reduce these human errors. Part of the safety management system is a documented record of how the vessel is operated, and should be able to be audited by a third party. The voluntary RCP proposes a template that companies can follow to document vessel operation and minimize these same human factors that lead to the chain of events that causes accidents.**

**Most current operational procedures for engine maintenance incorporate some approach to changing fuel filters. Many of these operating approaches involve some defined interval of filter changes, often engine hours. The problem with this interval approach is that it may not solve the problem. Example Worst Case Scenario: One NJ tug boat operator ran on the same filters for a year with no problem. Then one day a bad load of fuel was picked up that resulted in changing filters in an interval**



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**measured in hours. An interval approach to solving this worst case scenario experience might be to change filters every 2 hours. However a 2 hour interval for the year of this vessel's operation would be wasteful, expensive and potentially dangerous. Because raw fuel is exposed during filter changes, it has an increased fire hazard associated with it.**

**The Uninspected Towing Vessel (UTV) inspection guideline which describes vessel operation best practices for uninspected towing vessels notes that leaking fuel lines are among the leading causes of fires aboard towing vessels. It is best to do vessel maintenance during calm conditions at the dock, not while underway in a narrow channel. The Fuel Filter Alert can solve this problem by giving a progression of when the filters are getting dirty. This gives the crew advanced warning that the filters need to be changed, which means the maintenance can happen in a safer place. How often does a crew change fuel filters? And how dirty were the filters when they changed them? Unless a vacuum gauge is installed, it is impossible to know how dirty a fuel filter is when it is changed.**

**Well maintained change logs can be reviewed to audit how often filters are changed. A simpler audit path would be an automatic tie into the Vessel Alarm system. If the crew continually changes the filter before they become dangerously dirty, the alarm will never sound. If the alarm sounds, an easy integration via dry contact or RS232 can be interfaced to the vessel alarm system.**

**With this integration a digital history of how often the filters were allowed to get into the dangerous alarm condition can be viewed with a key stroke. Documenting procedures is great, but being able to audit that the procedures were followed is even better. Fuel Filter Alert can increase the safety of vessels by letting operators know exactly when the filters need to be replaced. It can reduce the cost of compliance through less waste and man hours that would otherwise be spent needlessly replacing fuel filters. Fuel Filter Alert also enables auditability on the fuel filter alert**



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**process to let management know how often filters are getting changed, and if filters are allowed to get so dirty as to become a risk to the vessel. The spirit of both RCP and Subchapter M compliance initiatives is about avoiding accidents and running safer vessels, not spending more on compliance and auditing.**