

## **KISH P & I LOSS PREVENTION CIRCULAR KPI-LP-55-2012** **(Possibility of Engine failures while changing over fuels)**

Referring to our previous circular:  
KPI-LP-46-2012 (Analysis of the Machinery Failure Cases)

The members are informed about some reported cases where the ships have encountered main or auxiliary engine failures while trying to change over for various reasons.

"EU Directive 2005/33/EC which came into force on January 1, 2010. This requires that the fuel oil used by ships while 'at berth' in EU ports is to be limited to 0.1% m/m maximum sulphur content.

The particular requirements within Article 4b are:

The change-over to this 0.1% m/m maximum sulphur fuel oil is to be undertaken as soon as possible after arrival and from it as late as possible prior to departure (allowing sufficient time for the crew to complete any change-over).

The times of these change-overs are to be recorded in the ship's logbook"

Whilst visiting ships in Dutch and Belgian ports it has been reported that a significant number of ships are changing their auxiliary equipment (generators and boilers) from Heavy Fuel Oil to <0.1% sulphur fuel (e.g. Marine Gas Oil (MGO)) before picking up the pilot or when on passage to the berth. Outbound, the change-over was being made after leaving the berth.

In some other areas where long river passages are involved; the changing over may create additional problems.

A marked increase in main engine and generator failures occurs during critical manoeuvring operations which could lead to catastrophic damage to ships and property.

It was also noted that the compliance with Emission Control Regulations could be a contributory factor in these failures.

Further problems may occur as a result of introducing relatively cool MGO into a fuel system that is already hot (e.g. "gassing up" of the fuel, thermal stressing etc.). Fuel pump leakage, seizure and decreased efficiency may also be experienced.

The procedure of changing from one type of fuel to another will, therefore, involve a degree of risk and could possibly result in a blackout situation. The consequences of this scenario may be largely minimised by making the fuel change-over after the ship is safely secured inside the port rather than being underway in probably congested / restricted waters.

There are no requirements of the regulations that oblige a ship to make the change-over before berthing (which not only increases potential risk but also fuel costs) only to do so **"as soon as possible after arrival and as late as possible prior to departure"**.

For practical purposes "after arrival" would be when the order "Finished with Engines" is given. Departure time should be set on the basis of the time notified as when engines are first required, reasonable delays accepted. Change-over times should be recorded in a logbook which is countersigned by either the Master or Chief Engineer.