2020 Shorts: Simple suggestions on complying with the IMO 2020 Sulphur Cap

North

Know your fuel

Quick guidance on VLSFOs for seagoing engineers

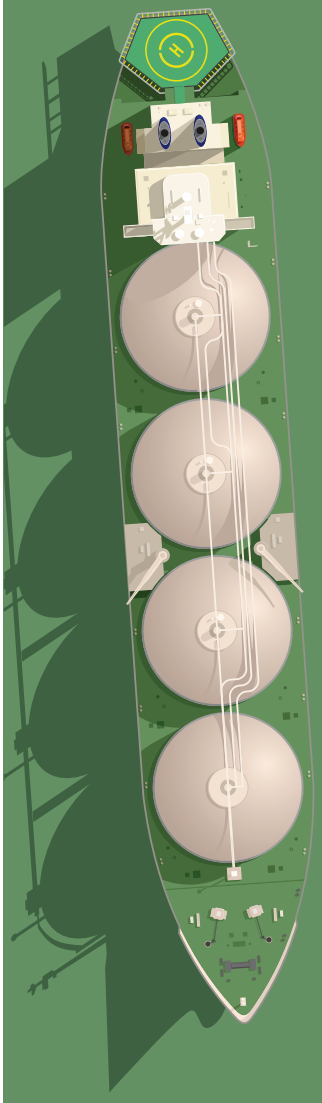
The reduction of the MARPOL Annex VI global fuel sulphur cap to 0.50% will come into force on 1 January 2020. Some vessels may switch to compliant distillates or install exhaust gas cleaning systems. But many may turn to the new generation of marine fuels – VLSFOs

WHAT IS A VLSFO?

A VLSFO (very-low-sulphur fuel oil) is an umbrella term for any compliant marine fuel that has a maximum sulphur content of 0.50% and is not a wholly distillate fuel.

WHAT CAN GO WRONG?

This depends on the characteristics of the fuel delivered to your vessel. These characteristics can vary massively between VLSFO products. Some of the quality parameters that you need to watch out for are:



- Kinematic viscosity – initial reports show VLSFO products ranging from 40 cSt to 300 cSt (at 50°C). This means that different stems will require different injection temperatures.
- Density – ranging from 900 kg/m^3 to 990 kg/m^3. This can affect the operation of centrifugal separators and may require gravity disc change and modifying the temperature.
- Cold flow properties – some VLSFOs are paraffinic in nature and are prone to waxing at low temperatures. This can lead to clogging of filters and solidification in the bunker storage tanks.
- Cat fines – some products are derived from severe refinery cracking process and therefore contain high levels of abrasive catalytic (aluminium and silicon) fines which could lead to engine damage.
- Stability – the composition and chemical structure of VLSFOs is likely to vary, which may lead to some becoming unstable, especially following a prolonged period of storage. An unstable fuel can result in a severe build-up of sludge and can block filters, separators and pipework. This ultimately ends up with engine failure (and possibly damage) and loss of propulsion and power.
- Compatibility – although different to stability, the result is often the same. Incompatibility occurs when two or more otherwise stable fuels become unstable when mixed.

WHAT CAN SHIPBOARD ENGINEERS DO ABOUT THIS?

Check the Spec

Before commencing bunkering – check the specification or certificate of quality provided by the supplier.

- Does it meet the engine requirements?
- Can you store it and handle it safely and without it solidifying?
- How does it compare with the fuel already on board?

CAUTION: **the certificate of quality only provides an indication of what the fuel should be. It isn't a guarantee and shouldn't be completely relied upon.**

For more information, please visit www.nepia.com

2020 Shorts: Simple suggestions on complying with the IMO 2020 Sulphur Cap

Know your fuel (cont).

Avoid Mixing

Can you avoid co-mingling the new stem with existing fuel? If unavoidable, limit any mixing in the bunker storage tanks to a 90/10 ratio.

Test the fuel on board

During bunkering, take periodic samples and test them for key quality parameters using onboard test kits that are common to most vessels. Typically:

- Viscosity
- Density
- Water content
- Compatibility spot test (make sure you have samples of existing fuel to hand to mix with the new fuel and test in various ratios)

Although less common, portable test equipment is also available for indicating cat fine content and XRF analysers for determining sulphur content.

Test the fuel in a lab

Take a representative sample of the stem during bunkering using a drip sampler. Despatch it to a laboratory without delay. Typically test against ISO 8217 parameters.

Unless it is unavoidable, do not start using the new fuel until you have received the lab test results.

Keep evidence

In the event of a bunker quality dispute or if the vessel is subject to a port State control inspection, proper paperwork is key.

Make sure the right documents are completed properly and are ready for inspection, such as bunker delivery notes (BDN), bunker checklists, specifications, letters of protest and any related correspondence.

Report any problems to the shipowners quickly because good, prompt evidence collection can make a big difference in a bunker dispute.

USEFUL LINKS

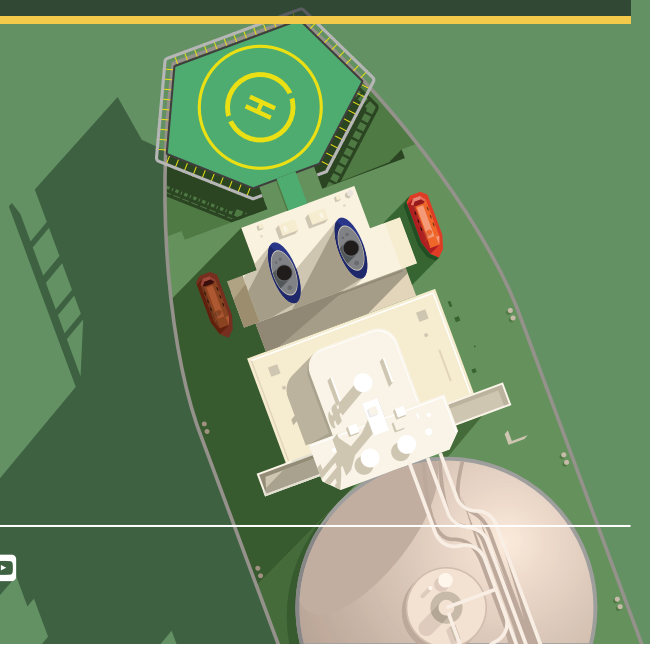
North's 2020 Vision expertise area
http://bit.ly/2sIYTg9

CIMAC WG07 | Guideline - Marine fuel handling in connection to stability and compatibility
http://bit.ly/2RjzdRF

Joint Industry Guidance on the supply and use of 0.50% sulphur marine fuel
http://bit.ly/2DK17yj

ACKNOWLEDGMENTS

Produced in conjunction with Innospec **www.innospecinc.com**



Global service built around you

For more information, please visit www.nepia.com