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Average fuel quality well within new ISO 8217 limits

August 10, 2010

The average quality of residual intermediate fuel oils (IFOs), recently presented in a half-year marine fuel quality review by DNV Petroleum Services (DNVPS), fall well within the latest ISO 8217 marine fuel specification limits.

The review was based on DNPVS test data for the first half of 2010 and primarily covered 180 centistokes (cSt) and 380 cSt grade fuels, as well as samples from the high viscosity grades above 450 cSt.

There have been fears in parts of the global marine fuels market that the tightening of specific parameters in the ISO 8217:2010 revision would lead to an increase in so-called 'off-spec' cases, though others have played down those fears. Several experts have told Bunkerworld that most fuels in the market today would meet the new limits

http://www.bunkerworld.com/news/i94854/FOBAS_debunks_ISO_8217_2010_claims .

Limits for ash and vanadium have been tightened in the fourth revision of ISO 8217, and there has been a significant reduction in limits for aluminium plus silicon (Al+Si), also known as cat fines.

Moreover, Calculated Carbon Aromaticity Index (CCAI) has been introduced as an indicator of ignition delay and there is now a limit on sodium content.

Comparing the average findings of the DNVPS half-year review with limits for RMG fuels ranging from 180 to 700 cSt suggests there may not be much cause for concern for most ISO 8217:2010 quality parameters for these grades.

One exception is density. Dr. Rudolph Kassinger, a senior technical consultant for DNVPS who wrote the review, noted that there has been an "upward creep" in fuel density and viscosity, most likely linked to the prevalence of bunker fuels that have been through secondary refinery processes such as catalytic cracking.

In the review, the average density of residual fuels tested by DNVPS was 983 kg/m³, which is approaching the upper limit under ISO 8217:2010 of 991 for RMG fuel (180 to 700 cSt). For RMK fuels in the 380 to 700 cSt range the upper density limit is 1010.

Vessels equipped with conventional fuel treatment systems are often unable to cope with fuels exceeding the 991.0 kg/m³ limit, but many modern container ships are able to handle higher density and viscosity RMK category fuels.

The average viscosity of the fuels in the DNVPS review was 317 cSt, suggesting most fell within the RMG and RMK residual fuel categories.

Water, which has a maximum limit of 0.50% in the ISO 8217 standard, averaged 0.1% in the DNVPS review. Ash also fell well within the standard's 0.100% limit at 0.04% on average. For metals, which have limits specified in parts per million (ppm) or mg/kg, the DNVPS review pegged the vanadium average at 106, well below the limit of 350 ppm for the most common RMG fuel grades and the 450 limit for RMK grades.

Sodium - a new parameter - averaged 21 ppm in the DNVPS study; again, well below the 100 ppm limit specified for RMG and RMK grades.

Aluminium averaged 12 ppm and silicon 13 ppm, giving a combined Al+Si of 25, also far below the 2010 specification maximum of 60 ppm for RMG and RMK grades.

Testing agencies have noted an increase in average values of Al+Si in low sulphur fuel oil grades supplied to meet the initial 1.50% sulphur limit in emission control areas (ECAs). There are concerns that the combination of the lower 1.00% sulphur limit for ECA operations since July 1 this year, and stricter Al+Si limits in the revised ISO 8217 standard, could be challenging for

fuel oil blenders.

As previously reported on Bunkerworld, the DNVPS study pegged average fuel sulphur content <[http://www.bunkerworld.com/news/i95734/%20http://www.bunkerworld.com/news/i95446/Fuel quality review points to future problems](http://www.bunkerworld.com/news/i95734/%20http://www.bunkerworld.com/news/i95446/Fuel%20quality%20review%20points%20to%20future%20problems)> in the first half of 2010 at 2.34%. This global average was slightly out of balance due to the inclusion of low sulphur fuel oil samples, while stem sizes were not taken into account.

Sulphur limits are no longer given for residual fuels in the ISO 8217:2010 standard and will need to be specified in bunker contracts in line with the relevant statutory limits.

The new CCAI parameter has been given an upper limit of 870 for RMG/RMK residual marine fuel grades in the ISO 8217:2010 standard.

The average tested by DNVPS in the first half of 2010 was 846, which is "not bad", according to a fuel user with extensive knowledge of the CCAI quality parameter.

Apart from density, one other quality parameter reviewed by DNVPS appeared to be edging close to the upper limits.

The average value for micro carbon residues (MCR) - which may indicate a fuel's tendency to form post-combustion deposits - was pegged at 13%. The limit for RMG fuels is 18.00% and for RMK grades it is 20.00% under ISO 8217:2010.

The specification limit for the higher RME 180 cSt fuel oil quality, however, is just 15.00%, and lower still for the lower viscosity and density residual marine fuel grades defined in the standard.

As yet, uptake of the latest ISO 8217 revision, which was published in mid-June <[http://www.bunkerworld.com/news/i95734/%20http://www.bunkerworld.com/news/i94391/Exclusive Fourth edition of ISO marine fuels standard announced](http://www.bunkerworld.com/news/i95734/%20http://www.bunkerworld.com/news/i94391/Exclusive%20Fourth%20edition%20of%20ISO%20marine%20fuels%20standard%20announced)>, appears to have been limited. Most bunkers contracts are still referring to the third edition of the international standard, ISO 8217:2005, although some suppliers are ready to commit to selling fuels under the 2010 edition.

Bunkerworld is currently running a poll asking if the revised ISO 8217 standard will lead to a significant increase in off-spec fuels. Click here <<http://www.bunkerworld.com/forum/polls/94361/Will-the-revised-ISO-8217-standard-lead-to-a-significant-increase-in-off-spec-fuels>> to cast your vote. The poll will close soon.