Subject:

AN INVITATION TO THE MARINE FUEL ANALYSIS SERVICES INITIATED BY NIPPON KAIJI KYOKAI

NK TECHNICAL INFORMATION

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To: Shipowners and Shipbuilders

Gentlemen:

As a consequence of the ever worsening situation in the world oil supply and demand coupled with the growing need of improving owners' ship operating economy, it is predicted that the marine fuel oil will become more and more degraded in the future. Reflecting recent oil conditions, the conventional petroleum refining processes of atmospheric distillation and vacuum distillation have given way to the thermal cracking and catalytic cracking processes which offer greater yields of light distillates than that available with the old processes. The residual oils from the latter processes tend to be increasingly degraded, as a result, the marine fuel relying on the base oil of such residuals will have a higher specific gravity and viscosity, increased Conradson carbon residue and asphaltenes content inevitable degrading in combustion characteristics and stability, thus proving a trend of general degradation in the quality of the marine fuel.

Further, the catalyst fines, in particular, used in the catalytic cracking process are mixed with the fuel oils, resulting in a variety of engine troubles.

Accompanying the degradation of heavy fuel oils, there are already numerous reports being presented concerning engine troubles resulting from the utilization of such fuel oils in ships. In certain cases, these have constituted major difficulties in the operational control and management of merchant ships.

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Among a number of countermeasures being discussed, the proper grasp of the properties of the marine fuel is considered to be extremely important, and on the basis of such correct recognition thereof optimum solution for the mounting issue may be identified.

The Society has recently implemented the marine fuel analysis service for the purpose of examining the fuel oil properties, with the specific aim of serving to shipowners, in their combat against the problems associated with the marine fuels.

This fuel analysis is being carried out by our Society jointly under the service agreement with Kyoto Science Research Institute Co. Ltd., (an affiliated company of Shimadzu Seisakusho Co., Ltd.). The normal routine analysis includes the following fifteen items. Course "A" is a thorough analysis covering all of the items, whereas Course "B" is limited to the six items of testing i.e., specific gravity, viscosity, water content, sulphur content, aluminium and silicon.

	Tests		Methods
(1)	Specific gravity	15/4°C	JIS K 2249
(2)	Viscosity	50°C CST	JIS K 2283
(3)	Flash point	°C P.M.	JIS K 2265
(4)	Pour point	°C	JIS K 2269
(5)	Water	% vol.	JIS K 2275
(6)	Water & sediments	% vol.	JIS K 2601
(7)	Conradson carbon residue	% wt.	JIS K 2270
(8)	Asphaltene	% wt.	Mod. ASTM D 893
(9)	Ash	% wt.	JIS K 2272
(10)	Sulphur	% wt.	JIS K 2541
(11)	Compatibility		ASTM D 2781
(12)	Vanadium	ppm	ICP
(13)	Sodium	ppm	ICP
(14)	Aluminium	ppm	ICP
(15)	Silicon		ICP

In addition to the above, other tests are available upon the specific request of the applicant. For the transport of sample fuel within Japan we employ a door to door delivery service; and we utilize the express delivery services of DHL Courier Services for overseas clients.

The analysis is carried out as soon as the samples arrive at our testing laboratory. Then, the results are carefully examined in the specialist department of the head office of the Society. The necessary comments are added and a corresponding report is immediately forwarded to the applicant.

Please feel free to contact the Chief Surveyor at our head office or our branch office for further details regarding these services.
