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Air pollution and ECA

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آلودگی هوا و نواحی کنترل شده آن

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All respectful ICS surveyors/customers

With gratitude, respectfully,

One of the main marine environment pollution factors is the exhaust gas which has been blown off due to combustion in marine engines.

According to this factor, some national rules and regulations have been enacted by some Administrations to minimize the risk of air pollution.

This technical information has been prepared according to these regulations and is being sent hereby.

The document related to the above mentioned subject and also the supplementary attachments are accessible through the following address on ICS Network (ICS-WAN):

<\\server\ICS Organization\Convention and LegislationDepartment\Publication\tech\2014\12>

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کلیه بازرسان و مشتریان محترم ICS

با سلام و احترام

همانگونه که مستحضرید، آلودگی هوای ناشی از متصاعد شدن دود حاصل از احتراق موتورهای دریایی یکی از اساسی ترین مباحث آلودگی زیست محیطی حال حاضر در صنایع دریایی و کشتیرانی می باشد. با توجه به این موضوع برخی از کشورها قوانین و مقررات ملی خاصی در این خصوص وضع و به مرحله اجرا گذاشته اند.

بر این اساس بیوست اطلاعیه فنی جهت هرگونه بهره برداری حضورتان ارسال می گردد.

این بخشنامه به انضمام بیوست های تکمیلی آن در بخش CLD از شبکه داخلی موسسه با آدرس ذیل قابل دسترسی می باشد.

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رضوان پناه

سرپرست واحد کنوانسیون ها و مقررات دریایی

موسسه رده بندی ایرانیان

ترک دعوی: اگرچه در گردآوری کلیه راهنماهای فنی ارائه شده توسط موسسه رده بندی ایرانیان، تا حد ممکن تلاش در نقت و صحت محتوا صورت گرفته است، این موسسه متحمل مسئولیتی در قبال هرگونه اشتباهات، خسارت های احتمالی و جرانی که ممکن است در ارتباط با بکار گیری مفاهیم و مطالب ارائه شده رخ دهد، نمی باشد.

موسسه رده بندی ایرانیان

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1. GENERAL:

SO_x and particulate matter emission controls apply to all fuel oil, combustion equipment and devices onboard and therefore include both main and all auxiliary engines together with items such as boilers and inert gas generators. These controls divide between those applicable inside Emission Control Areas (ECA) established to limit the emission of SO_x and particulate matter and those applicable outside such areas and are primarily achieved by limiting the maximum sulphur content of the fuel oils as loaded, bunkered, and subsequently used onboard. These fuel oil sulphur limits (expressed in terms of % m/m – that is by weight) are subject to a series of step changes over the years.

2. Emission Control Areas (ECA):

2.1- Baltic Sea area – as defined in Annex I of MARPOL (SO_x only);

2.2- North Sea area – as defined in Annex V of MARPOL (SO_x only);

2.3- North American area– (entered into effect 1 August 2012) – as defined in Appendix VII of Annex VI of MARPOL (SO_x, NO_x and PM); and\

2.4- United States Caribbean Sea area – (expected to enter into effect 1 January 2014) – as defined in Appendix VII of Annex VI of MARPOL (SO_x, NO_x and PM).

Most ships which operate both outside and inside these ECA will therefore operate on different fuel oils in order to comply with the respective limits. In such cases, prior to entry into the ECA, it is required to have fully

changed-over to using the ECA compliant fuel oil, regulation 14.6, and to have onboard implemented written procedures as to how this is to be undertaken. Similarly change-over from using the ECA compliant fuel oil is not to commence until after exiting the ECA. At each change-over it is required that the quantities of the ECA compliant fuel oils onboard are recorded, together with the date, time and position of the ship when either completing the change-over prior to entry or commencing change-over after exit from such areas. These records are to be made in a logbook as prescribed by the ship's flag State, in the absence of any specific requirement in this regard the record could be made, for example, in the ship's Annex I Oil Record Book.

3. Emission Control Areas overview:

As of 1st July 2010, the new IMO fuel Sulphur (SO_x) limits contained in the 2008 amendment of MARPOL Annex VI entered into force, and as a consequence, the maximum permitted Sulphur content of fuel oils used in IMO recognized SO_x Emission Control Areas (ECAs) was lowered to 1.0% m/m by weight (from the previous 1.5% m/m)

It should be noted that some similar national or regional restrictions also exist

On 1 January 2015 will the sulfur requirements in Emission Control Areas (ECA) be stricter again. At that time will vessels operating in ECA's be required to comply to a sulfur content of just 0.1%. The SO_x requirements apply to all fuel oils as defined in MARPOL Annex VI Reg.2.9.

As Imposes the fuel oil change over potential challenges as specified in ISO 8217, such as low viscosity, lubricity, flashpoint, ignition and combustion quality. A major challenge is the low viscosity of the fuel oils which might cause leakages on the diesel engines, boilers and pumps. Internal leakages in fuel supply and fuel injection pumps might result in reduced fuel supply to the engine, which will have consequences for the engine performance (e.g. starting of engine). Ship owners may consider installing fuel pumps and injection nozzles which adapt to fuel with low viscosity. Too low

viscosity oil will lead to increased wear or seizure of fuel oil pumps.

Because of the explosion risks connected to the use of highly volatile fuels on board ships, IMO has banned the use of fuels with a flashpoint lower than 60 degrees Celsius. An internal study has shown that most of the low sulfur fuel oils have a flashpoint lower than 60 degrees.

These fuel oils should not be used on board and shall be handled in accordance with instructions from the Flag Administration and Class Society. Please note that the flashpoint is part of the Bunker Delivery Note.

It might be advisable to install cooler or chiller units in the fuel or return line to prevent that the fuel oil is heated above 40 degrees Celsius which will lead to lower viscosity and hence may concur problems with the diesel engines, boilers, pumps etc. as described.

Ship owners should be aware that MARPOL Annex VI Reg.4.1 allows the use of alternative compliance measures provided that the vessels flag administration certifies that these installations are "at least as effective in terms of emissions reductions as that required".

(KINDLY NOTE THE NEXT PAGE)

Table of allowable Sox Emission Outside & Inside ECA

Outside an ECA established to limit SOx and particulate matter emissions	Inside an ECA established to limit SOx and particulate matter emissions
4.50% m/m prior to 1 January 2012	1.50% m/m prior to 1 July 2010
3.50% m/m on and after 1 January 2012	1.00% m/m on and after 1 July 2010
0.50% m/m on and after 1 January 2020*	0.10% m/m on and after 1 January 2015

* Depending on the outcome of a review, to be concluded in 2018, as to the availability of the required fuel oil, this date could be deferred to 1 January 2025.