Ship SOx and NOx Emissions Reminder

(February 2018)

Reductions in SOx and NOx emissions will continue to impact shipping in the near future.

SOx emissions

1. MARPOL Annex VI Regulation 14 limits the fuel oil sulphur content to any fuel oil used onboard all ships, new and existing, operating with an International Air Pollution Prevention Certificate.
2. The current 3.5% m/m global limit for the sulphur content of fuel oil will reduce to 0.50% m/m as of 1 January 2020.
3. Within Emission Control Areas (Baltic, North Sea, USA/Canada and USA/Caribbean), the limit for the sulphur content of fuel oil of 0.1% m/m remains in place today. However, prior to 1 January 2020, the sulphur content limit does not apply to ships operating in the North American area or the United States Caribbean Sea which are built on or before 1 August 2011 and powered by propulsion boilers that were not originally designed for continued operation on marine distillate fuel or natural gas
4. The sulphur content of fuel oil used onboard ships certified under MARPOL VI, is not permitted to exceed the global and ECA limits, unless the ship is fitted with an approved 'Equivalent' under Regulation 4 of Annex VI such as a SOx exhaust gas cleaning system (scrubber).
5. Ships intending to comply by using separate fuel oils when entering or exiting an ECA are to carry onboard a written fuel changeover procedure. The fuel changeover date, time, position of the ship, and volume of fuel oil in each tank are to be recorded in the fuel changeover log book.
6. Ship operators should also take into account regional requirements that may apply, for example:
    - Australia Sydney Harbor Low Sulphur Fuel Limits
    - China Sulfur Limit - ABS Regulatory Update
    - EU Sulphur Directive 2012/33/EU

NOx emissions

7. The MARPOL Annex VI Regulation 13 NOx limits apply to marine diesel engines (any reciprocating internal combustion engine operating on liquid fuel, dual fuel or gaseous fuel only) with a power output of more than 130kW, except engines used solely for emergencies or installed on ships of a certain age and operating in certain areas.
8. The application of the marine diesel engine NOx limits is linked with the ship's construction date, i.e. the date the keels of which were laid, or at a similar stage of construction.
9. The Tier III NOx emission standard applies to marine diesel engines installed on ships constructed on/after:
    - 1 January 2016 and which operate in the North American ECA or the U.S. Caribbean Sea ECA; and
    - 1 January 2021 and which operate in the North Sea ECA (including the English Channel) and the Baltic Sea ECA.

10. Three exemptions are provided for marine diesel engines installed:
    - on purely recreational ships with a length < 24 m
    - on a ship with a combined propulsion power < 750 kW if it is demonstrated that the ship cannot comply with Tier III because of design or construction limitations of the ship; and
    - on purely recreational ships constructed prior to 1 January 2021 of less than 500 GT and with a length ≥ 24 m.
11. The operating Tier level and on/off status of Tier II/Tier III certified engines and Tier II certified engines are to be recorded when the ship enters into, and exits from, the above mentioned ECAs, and when the on/off status changes within an ECA, together with the date, time and position of the ship. Prior to entry into the applicable NOx ECA, sufficient time must be allowed for the tier change-over, to ensure Tier III compliance upon entry into the ECA. A written procedure showing how the tier change-over is to be done is to be carried onboard.
12. In the event a ship mentioned in item 9 was not initially fitted with Tier III compliant marine diesel engines, because trading in the above mentioned ECAs was not envisaged at the time of build, but subsequently intends to operate in these ECAs, the engines will need to be modified and certified to meet the Tier III NOx standards
13. Emission abatement technologies applied to marine diesel engines to achieve Tier III NOx compliance include:
    - Selective Catalytic Reduction (SCR)
    - Exhaust Gas Recirculation (EGR)

Further information

14. For further information and requirements on SOx and NOx exhaust emission abatement technologies, refer to:
    - Global Sulphur Gap - 2020
    - ABS Advisory on Exhaust Gas Scrubber Systems
    - ABS Advisory on Fuel Switching
    - ABS Guide for Exhaust Emission Abatement
    - ABS Guide for SOx Scrubber Ready Vessels