

## HOT TOPIC - MARPOL

## Prevention of Air Pollution from Ships



Annex VI of MARPOL 73/78 and the NOx Technical Code is applicable to every ship over 400gt and every fixed and floating drilling rig and other platforms.

The new rules, have set limits on sulphur oxide (SOx) and nitrogen oxide (NOx) emissions from ship exhausts. Deliberate emissions of ozone depleting substances are also prohibited.

A global cap of 4.5% m/m on the sulphur content of fuel oils has been introduced, with observance to be monitored by the IMO. Furthermore, provision has been made for creating special 'SOx Emission Control Areas' (SECAs) in environmentally sensitive areas with very strict rules: for example fuel with sulphur content no higher than 1.5% m/m or the fitting of exhaust gas cleaning systems. In the current Annex VI, there are two SECAs designated, namely, the Baltic Sea and the North Sea area, which also includes the English Channel.

NOx emissions are a complex problem because they are created as by-products of fuel combustion in diesel engines. In the past the engines were optimised for minimal fuel consumption, now with the new Annex VI rules it means that performance must be trimmed to reduce those emissions.

A compulsory NOx Technical Code, (developed by IMO), specifies the way this is done and was adopted by the Conference under the cover of Resolution 2.

The Code applies to all engines >130kW installed on ships built after January 1, 2000 and all engines that have or will undergo a major conversion after that date. Specific

NOx emission limits vary according to engine speed.

In April 2008 The Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO) has approved proposed amendments to the MARPOL Annex VI regulations to reduce harmful emissions from ships.

The main changes would see a progressive reduction in sulphur oxide (SOx) emissions from ships, with the global sulphur cap reduced initially to 3.50% (from the current 4.50%, effective from 1 January 2012; then progressively to 0.50 %, effective from 1 January 2020, subject to a feasibility review to be completed no later than 2018.

The limits applicable in Sulphur Emission Control Areas (SECAs) would be reduced to 1.00%, beginning on 1 March 2010 (from the current 1.50 %); being further reduced to 0.10 % , effective from 1 January 2015.

Progressive reductions in nitrogen oxide (NOx) emissions from marine engines were also agreed, with the most stringent controls on so-called "Tier III" engines, i.e. those installed on ships constructed on or after 1 January 2016, operating in Emission control Areas.

The revised Annex VI will allow for an Emission Control Area to be designated for SOx and particulate matter, or NOx, or all three types of emissions from ships, subject to a proposal from a Party or Parties to the Annex which would be considered for adoption by the Organization, if supported by a demonstrated need to prevent, reduce and control one or all three of those emissions from ships.



More information on  
this topic to follow in  
the next issue!

# Fire Suppression & Safe Co<sup>2</sup> Concentration in Working Areas



Carbon Dioxide has long been recognized as an effective method of fire suppression and is used as such in many sectors including the marine sector.

## Examining the Risks Associated with Carbon Dioxide Extinguishing Systems

The risk involved with the use of carbon dioxide flooding systems is based on the fact that the level of carbon dioxide needed to extinguish fires (and, thus, to protect an enclosure) is many times greater than the lethal concentration. Because the consequences of exposure happen quickly and without warning, there is little or no margin for error. At concentrations greater than 17 percent, such as those encountered during carbon dioxide fire suppressant use, loss of controlled and purposeful activity, unconsciousness, convulsions, coma, and death occur within 1 minute of initial inhalation of carbon dioxide (OSHA 1989, CCOHS 1990).

Sigma Hellas, in addition to the normal safety measures, offers CO<sub>2</sub> concentration monitoring systems that continuously monitor the air in the work area, so that when CO<sub>2</sub> discharge/release has been activated because of a fire hazard or because of an accidental discharge/release the personnel evacuates from the area, and safe return to the work area, when the CO<sub>2</sub> concentration has been reduced to acceptable and safe levels.

The offered configurations can be custom made for the specific application and can cover most of the conventional requirements for safety including logging with LCD graphics display, so that any potential risk could be minimized.

The system simply runs by itself and requires little or no maintenance.

**Maybe now is the right time for a CO<sub>2</sub> risk appraisal and specific conditions where CO<sub>2</sub> is used for fire suppression in your company. Should you require additional information do not hesitate to contact us with details of your requirements.**

# Portable Flow Meter

Many engineers are facing difficult flow applications where the conventional flow meter is difficult or impossible to use.

Sigma Hellas is offering now portable or permanent installation ultrasonic flow meters, which can be strapped on the outside of the pipe in a few minutes and measure the flow rate of any fluid as long as it contains air bubbles or solids. These flow meters are ideal for most chemicals, acids, caustics, slurries, sludge, lubrication fluids etc .

A few important features are:

## Easy & simple installation, without shutting the system

- Can be used on pipes from 25mm up to 4,5m diameter
- Suitable for full pipes of most common materials (steel, cast iron, PVC, fiberglass etc.) and wall thickness
- Flow range from 0.08 to 12.2 m/sec
- Simple to calibrate with a built-in 3 key calibrator
- Displays: flow rate, totalizer, menu, status, signal strength
- 4-20mA, RS232 output (3 control relays & 1 analogue 4-20mA for the fixed installation units)
- integrated programmable 50000 point capacity logger (portable)

Should you require additional information, do not hesitate to contact us with details of your requirements.



For more information  
E: [sales@sigmahellas.gr](mailto:sales@sigmahellas.gr)  
W: [www.sigmahellas.gr](http://www.sigmahellas.gr)

# All the Solutions for Level Gauging Problems



The methods for level measurement and control of liquids are many and a choice is normally made depending on the requirements of each application and the

advantages that each method can offer in order to satisfy the function of the application.



With fuel costs spiralling up continuously, accurate fuel tank gauging is becoming more important than ever. Sigma Hellas with the enormous product range and experience that has available, and in co-operation with the American **K-TEK Corporation (an international leader in level systems)** will offer you the right system - Magnetostrictive systems with the control and unsurpassed high accuracy (from 0,01%) that you need.

This is available with a rigid or flexible probe or without local LCD display, two analogue outputs for level and one for temperature (optional)

**Other level measurement products :- Radar, Magnetic Level gauges & switches, Buoyancy Level switches, - and all with Lloyds register approval certification.**

Should you need additional information do not hesitate to contact us with details of your application.

