

**Appendix I – Revised MARPOL Annex VI Emission Requirements Diagram**

Regulation / Date of Application	ODS	ODS Records	Tier I NO <sub>x</sub> <sup>9</sup>	Tier II NO <sub>x</sub> <sup>9</sup>	Tier III NO <sub>x</sub> (ECA) <sup>9</sup>	SO <sub>x</sub> & PM <sup>9</sup>	SO <sub>x</sub> & PM (ECA) <sup>9</sup>	VOCs	Incinerator
	12.3.1 / 12.3.2	12.5 / 12.6	13.3 / 13.7.1	13.4	13.5.1	14.1	14.4	15.5 / 15.6	16.6.1
1 January 2000			New Ships <sup>5</sup>						New Installations <sup>14</sup>
19 May 2005	New ODS Installations Prohibited <sup>1</sup>					4.50%	1.50%	Vapor Collection System <sup>12</sup>	
1 July 2010		Equipment List <sup>3</sup> / Record Book <sup>3,4</sup>	Pre-2000 Engines <sup>6</sup>				1.00% <sup>11</sup>	VOC Mgmt Plan <sup>13</sup>	Additional Substances Prohibited <sup>15</sup>
1 January 2011				New Ships <sup>5</sup>					
1 January 2012					Tech Review <sup>7</sup>	3.50%			
1 January 2015							0.10% <sup>11</sup>		
1 January 2016					New Ships <sup>5,8</sup>				
2018						Avail Review <sup>10</sup>			
1 January 2020	New HCFC Installations Prohibited <sup>2</sup>					0.50%			

Existing Annex VI

Revised Annex VI Requirements

## Footnotes

### **Revised MARPOL Annex VI Emission Requirements Diagram**

1. *New ODS Installations*, other than with hydro-chlorofluorocarbons (HCFCs), means the installation of systems, equipment, or materials (including new portable fire-extinguishing units, insulation, etc.) containing such ODS, on a ship constructed on or after **19 May 2005**. In the case of existing ships, equipment/materials which have a contractual delivery date to the ship on or after **19 May 2005** or, in the absence of a contractual delivery date, the actual date of delivery to the ship on or after **19 May 2005**, shall be prohibited.
2. *New HCFC Installations* means the installation of systems, equipment, or materials (including new portable fire-extinguishing units, insulation, etc.) containing HCFCs, on a ship constructed on or after **1 January 2020**. In the case of existing ships, equipment/materials which have a contractual delivery date to the ship on or after **1 January 2020** or, in the absence of a contractual delivery date, the actual date of delivery to the ship on or after **1 January 2020**, shall be prohibited.
3. Applicable to **all** ships of **400 GT** and above, and every fixed and floating drilling rig and other platforms regardless of tonnage.
4. Applicable to all ships with rechargeable systems containing ODS.
5. Applicable to diesel engines with a power output greater than **130 kW** installed on any ship (irrespective of tonnage) constructed on or after the "Effective Date" indicated on the chart. This may also include a **major conversion** as defined in the Revised MARPOL Annex VI, Regulations 13.2.1 and 13.2.2.
6. Applicable to diesel engines with a power output greater than **5,000 kW** and a per cylinder displacement at or above **90 litres**, installed on a ship constructed on or after **1 January 1990** but prior to **1 January 2000**, for which a certified "Approved Method" is available for application to that engine, in accordance with Regulation 13.7. The application date is variable, due no later than the first renewal survey occurring 12 months or more after the certifying administration has notified the IMO that certification of the "Approved Method" has been issued.
7. The status of technological developments required to achieve Tier III NO<sub>x</sub> emission requirements will be evaluated by the IMO beginning in 2012 to be completed no later than 2013, for the purpose of adjusting, if proven necessary, the effective date of 1 January 2016 to a later date.
8. When operating outside of the designated ECA, the NO<sub>x</sub> emission limits set forth under Tier II shall be met. Furthermore, diesel engines may be exempted from meeting the NO<sub>x</sub> emission limits set forth under Tier III, when such engines are:
  - (1) installed on a ship with a length less than **24 meters** (which is specifically designed and used solely for recreational purposes); or
  - (2) installed on a ship with a combined nameplate diesel engine propulsion power of less than **750 kW** if compliant engines cannot be physically installed due to design or construction limitations of the ship.
9. Equivalent effective measures, such as an EGCS, may be implemented to achieve compliance with any of the standards set forth under the revised Regulation 4 after **1 July 2010**.
10. A review of the 0.50% m/m fuel oil sulphur cap on and after 1 January 2020 is to be completed by 2018 to evaluate the availability of fuel oils required to comply with this standard, for the purpose of postponing, if proven necessary, the effective date for this standard until **1 January 2025**.
11. Ships using separate fuel oils to comply with applicable ECA requirements will be required to carry and implement a written fuel oil change-over procedure for entering or leaving the ECA.
12. Applicable only to tankers operating in ports or terminals which have declared the regulation of VOC emissions. The vapour collection system is to be approved by a RO on behalf of the Administration, and fitted within three (3) years after the declaration from the port or terminal has been submitted to the IMO.
13. Applicable to all tankers carrying crude oil (irrespective of tonnage), and is to be approved by an RO on behalf of the Administration.
14. *New Installation* refers to the installation of an incinerator on a ship constructed on or after **1 January 2000**, or for existing ships, an incinerator which is installed onboard that ship on or after **1 January 2000**.
15. The incineration of sewage sludge and sludge oil either of which are not generated onboard the ship, and EGCS residues are prohibited.