

The Shipping (Inert Gas Systems) Notice 1989

Pursuant to section 235 of the Shipping and Seamen Act 1952, the Minister of Transport hereby gives the following notice.

Notice

1. Title and commencement—(1) This notice may be cited as the Shipping (Inert Gas Systems) Notice 1989.

(2) This notice shall come into force on the 1st day of November 1989.

2. Performance Standard prescribed—The Performance Standard set out in the Schedule to this notice is hereby prescribed for the purposes of the Shipping (Fire Appliances) Regulations 1989.

Schedule**Performance Standard for Inert Gas Systems**

1. General—The system shall be capable of:

(1) Inerting empty cargo tanks including slop tanks by reducing the oxygen content of the atmosphere in each tank to a level at which combustion cannot be supported;

(2) Maintaining the atmosphere in any part of any cargo tank or slop tank at an oxygen content not exceeding 8 percent by volume and at a positive pressure at all times both in port and at sea except when it is necessary for such a tank to be gas free;

(3) Eliminating the need for air to enter a tank during normal operations except when it is necessary for such a tank to be gas free;

(4) Purging empty cargo tanks including slop tanks of hydrocarbon gas, so that subsequent gas freeing operations will at no time create a flammable atmosphere within the tank.

2. Inert gas delivery rate and content—(1) The system shall be capable of delivering inert gas to the cargo tanks and slop tanks at a rate of at least 125 percent of the maximum rate of discharge capacity of the ship expressed as a volume;

(2) The system shall be capable of delivering inert gas with an oxygen content of not more than 5 percent by volume in the inert gas supply main to the cargo tanks and slop tanks at any required rate of flow.

3. Inert gas supply—The inert gas supply may be treated flue gas from the main or auxiliary boilers, from one or more separate gas generators or other sources or from any combination thereof. The Chief Surveyor may approve systems using inert gases other than flue gas, provided the Chief Surveyor is satisfied that an equivalent standard of safety is achieved. Systems using stored carbon dioxide shall not be permitted unless the Chief Surveyor is satisfied that the risk of ignition from generation of static electricity by the system itself is minimised.

4. Isolating valves—Flue gas isolating valves shall be fitted in the inert gas supply mains between the boiler uptakes and the flue gas scrubber. These valves shall be provided with indicators to show whether they are open or shut, and precautions shall be taken to maintain them gastight and keep the seating clear of soot. Arrangements shall be made so that the boiler soot blowers cannot be operated when the corresponding flue gas valve is open.

5. Inert gas scrubbers and filters—(1) A flue gas scrubber shall be fitted which will effectively cool the volume of gas specified in clause 2 of this Performance Standard and remove solids and sulphur combustion products. The cooling water arrangements shall be such that an adequate supply of water will always be available without interfering with any essential services on the ship. Provision shall also be made for an alternative supply of cooling water.

(2) Filters or equivalent devices shall be fitted to minimise the amount of water carried over to the inert gas blowers.

(3) The scrubber shall be located aft of all cargo tanks, slop tanks, cargo pump rooms and cofferdams separating these spaces from machinery spaces of Category A.

6. Inert gas generator—(1) At least two blowers shall be fitted which together shall be capable of delivering to the cargo tanks and slop tanks, at least the volume of gas required by clause 2 of this Performance Standard. In a system provided with a gas generator, the Chief Surveyor may permit only one blower if that system is capable of delivering the total volume of gas required by clause 2 to the protected cargo tanks, provided that sufficient spares for the blower and its prime mover are carried on board to enable any failure of the blower and its prime mover to be rectified by the ship's crew.

(2) Two fuel oil pumps shall be fitted to the inert gas generator. The Chief Surveyor may permit only one fuel oil pump on condition that sufficient spares for the fuel oil pump and its prime mover are carried on board to enable any failure of the fuel oil pump and its prime mover to be rectified by the ship's crew.

(3) The inert gas system shall be so designed that the maximum pressure which it can exert on any cargo tank will not exceed the test pressure of any cargo tank. Suitable shut-off arrangements shall be provided on the suction and discharge connections of each blower. Arrangements shall be provided to enable the functioning of the inert gas plant to be stabilized before commencing cargo discharge. If the blowers are to be used for gas freeing, their air inlets shall be provided with blanking arrangements.

(4) The blowers shall be located aft of all cargo tanks, cargo pump rooms and cofferdams separating these spaces from machinery spaces of Category A.

7. Prevention of inert gas leakage—(1) The design and location of scrubber and blowers with relevant piping and fittings shall be such as to prevent flue gas leakages into enclosed spaces.

(2) To permit safe maintenance, an additional water seal or other effective means of preventing flue gas leakage shall be fitted between the flue gas isolating valves and scrubber or incorporated in the gas entry to the scrubber.

8. Regulation of inert gas—(1) A gas regulating valve shall be fitted in the inert gas supply main. This valve shall be automatically controlled to close as required in clause 18(3) and 18(4) of this Performance Standard. It shall also be capable of automatically regulating the flow of inert gas to the cargo tanks unless means are provided to automatically control the speed of the inert gas blowers required in clause 6 of this Performance Standard.

(2) The valve referred to in sub-clause (1) of this clause shall be located at the forward bulkhead of the most forward gas safe space through which the inert gas supply main passes.

9. Non-return devices—(1) At least two non-return devices, one of which shall be a water seal, shall be fitted in the inert gas supply main, in order to prevent the return of hydrocarbon vapour to the machinery spaces uptakes or to any gas safe spaces under all normal conditions of trim, list and motion of the ship. They shall be located between the automatic valve required by clause 8 of this Performance Standard and the aftermost connection to any cargo tank or cargo pipeline.

(2) The devices referred to in this paragraph shall be located in the cargo area on deck.

(3) The water seal referred to in sub-clause (1) of this clause shall be capable of being supplied by two separate pumps, each of which shall be capable of maintaining an adequate supply at all times.

(4) The arrangement of the seal and its associated provisions shall be such that it will prevent back-flow of hydrocarbon vapours and will ensure the proper functioning of the seal under operating conditions.

(5) Provision shall be made to ensure that the water seal is