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Technical regulation no. 8 of 21 November 2006 issued by the Danish Maritime Authority

Technical regulation on the securing of fuel oil pipes in certain ships

In pursuance of sections 3 and 5, section 17(5) and section 32(4) of the Act on Safety at Sea, cf. Consolidated Act no. 627 of 26 July 2002, as amended by Act no. 1173 of 19 December 2203, Act no. 1231 of 27 December 2003 and Act no. 1464-5 of 22 December 2004 and Decree no. 607 of 25 June 2001 and Decree no. 729 of 19 August 2003 on the entry into force for Greenland of the Act on Safety at Sea, in consultation with the Greenland Home Rule and by authority from the Danish Minister of Economic and Business Affairs, the following provisions are laid down:

Application

Section 1. This regulation shall apply to ships covered by:

- 1) Technical regulation on the construction and equipment, etc. of ships, passenger ships engaged in domestic voyages, Notice D from the Danish Maritime Authority, insofar as regards ships of classes C and D, cf. chapter I, regulation 3, constructed before 1 July 1998.
- 2) Technical regulation on the construction and equipment, etc. of fishing vessels, Notice E from the Danish Maritime Authority.
- 3) Technical regulation on the construction and equipment, etc. of small commercial vessels, Notice F from the Danish Maritime Authority.
- 4) Technical regulation no. 15 of 20 November 2000 on ships for special purposes (ships worthy of preservation, sport fishing vessels, etc.).
- 5) Technical regulation on the construction and equipment, etc. of ships, Notice B from the Danish Maritime Authority insofar as regards cargo ships with a tonnage below 500 constructed before 1 January 2002, cf. chapter I, regulations 1 and 2.

Subsection 2. The regulation shall not cover emergency diesel engines, engines in lifeboats and other equipment used only in emergencies.

Design and installation

Section 2. Fuel oil pipes, their valves and other fittings as well as filters and pre-heaters shall be made of steel or other approved material; however, a limited use of tubing may be permitted. Such tubes and their ends shall be made of approved fireproof materials of sufficient strength.

Section 3. All external pressurized fuel oil pipes between high-pressure fuel pumps and fuel injectors shall be protected by a double-walled pipe system capable of retaining fuel in case of failure of a high-pressure pipe. A double-walled pipe consists of an external pipe in which the fuel pipe is located so that they make a total unit. The double-walled pipe system shall be fitted with means for collecting fuel from leakages and arrangements for sounding an alarm in case of leaks on a fuel pipe.

Section 4. All surfaces with a temperature above 220 °C which may, in case of leakages in the fuel oil system, be splattered with oil shall be adequately insulated.

Section 5. Fuel oil pipes may not be located immediately above or in the vicinity of high temperature units, including boilers, steam pipes, exhaust manifolds, silencers or other equipment required to be insulated. Insofar as possible, fuel oil pipes shall be located far from hot surfaces, electrical installations or other sources of ignition and shall be shielded or suitably protected in any other way in order to avoid oil splashes or oil leakages onto the source of ignition. The number of joints in such pipe systems shall be kept to a minimum.

Section 6. Components in the fuel system of a diesel engine shall be designed in consideration of the maximum (peak) pressure occurring in operation, including any high-pressure pulsation that occurs and is carried back to the fuel supply and drainage pipes by means of the fuel injection pump. Joints in fuel supply and drainage pipes shall be made in consideration of their ability to prevent the leakage of oil under pressure while they are in operation and after maintenance.

Section 7. In case of engine installations with several engines fed by the same source of fuel, it shall be possible to cut off the fuel supply and drainage pipes for each individual engine. The means for cutting off the supply may not affect the operation of the other engines and shall be possible to operate from a place that is not inaccessible in case of fire in one of the engines.

Equivalents and testing

Section 8. The provisions of this regulation shall not prevent the use on board of any other fitting, material, appliance or apparatus, etc. or the making of any other provision representing at least the same degree of safety as required by this regulation.

Subsection 2. The Danish Maritime Authority shall accept tests carried out by recognised test institutes, including test institutes in other EU member States and in countries covered by the EEA agreement and Turkey, providing appropriate and satisfactory guarantees of a technical, professional and impartial nature.

Penalty and entry into force, et.

Section 9. Contraventions of this regulation shall be liable to punishment by fine or imprisonment for a period not exceeding 1 year.

Subsection 2. The punishment may be increased to imprisonment for a period not exceeding 2 years if

- 1) the contravention has resulted in damage to life or health, or risk of such damage;
- 2) an injunction or order has previously been issued in connection with the same or equivalent situations; or
- 3) the contravention has given or has been intended to give financial benefits to the transgressor or others.

Subsection 3. It shall be considered especially aggravating circumstances if the contravention has resulted in damage to the life or health, or risk of such damage, to young persons below the age of 18, cf. subsection 2, item 1.

Subsection 4. If the benefit obtained through the contravention is not confiscated, the size of the financial benefit obtained or intended shall be taken into account when determining the fine, including supplementary fines.

Subsection 5. Companies, etc. (legal persons) may incur criminal liability according to the regulations in chapter 5 of the Danish Criminal Code.

Section 10. If the contravention is covered by the Decree on the entry into force for Greenland of the Danish Act on Safety at Sea, measures may be ordered in accordance with the Penal Code for Greenland.

Subsection 2. The conditions stipulated in section 10(2) and (3) shall be considered aggravating circumstances.

Subsection 3. If the financial benefit achieved is not confiscated, cf. section 116(1) of the Penal Code, special consideration shall be given to the size of the achieved or intended financial benefit when determining the size of the fine, including supplementary fine.

Subsection 4. If the violator is a company, etc. (legal person), the legal person may be liable to a fine. If the violator is the State, the Greenland Home Rule, a municipality, an inter-municipal enterprise covered by section 64 of the Greenland Parliament Act on municipal councils and settlement councils, etc. or a settlement council, the relevant public authority shall be liable to a fine.

Subsection 5. If the person in question is not resident in Greenland, or if his attachment to Greenland society is of such a loose nature that the preconditions for the application of the measures are not present, legal proceedings may be instituted in Denmark or the case may be sent for trial in Denmark.

Section 11. This regulation shall enter into force on 1 April 2007 for ships the keels of which are laid on or after this date.

Subsection 2. For ships the keels of which are laid before 1 April 2007, this regulation shall enter into force on 1 April 2010, cf. however section 1(1), items 1 and 5.

Section 12. However, in ships the keels of which are laid before 1 April 2007, for engines:

- 1) the output of which is not any higher than 375 kW, and
- 2) the fuel injection pumps of which supply more than one fuel nozzle,
a suitable inclusion may be used in stead of double-walled pipe systems.

Danish Maritime Authority / 21 November 2006

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**Remarks to technical regulation no. 8 of 21 November 2006
on the securing of fuel oil pipes in certain ships**

Often, engine room fires arise because a high-pressure fuel oil pipe on a propulsion engine or auxiliary engine leaks and atomized fuel oil is sprayed from this leakage onto the hot surfaces of the engine, such as the exhaust pipe.

In order to reduce this fire risk to a minimum, requirements were introduced in Notice B from the Danish Maritime Authority and Notice D from the Danish Maritime Authority in 1998 and 1999 for engines in new cargo and passenger ships to be fitted with a pipe covering system protecting the high-pressure piping between the fuel oil pumps and the fuel oil valves/nozzles.

In 2003, similar requirements were introduced for existing cargo ships with a tonnage above 500 and for existing passenger ships engaged on international voyages and on domestic voyages of class B.

The purpose of this regulation is to acquire a similar fire-protection level in ships not covered by the above-mentioned requirements.

- As is evident from section 1 of the regulation those are:
- Existing passenger ships engaged on domestic voyages of classes C and D constructed before 1 July 1998;
- Fishing vessels and small commercial vessels as well as ships constructed for special purposes; and
- Existing cargo ships with a tonnage below 500 constructed before 1 January 2002.

The intention is to include the new provisions in the relevant sets of regulations, i.e. Notices from the Danish Maritime Authority D, E and F, in connection with future revisions.

According to the entry into force provision of section 11, this regulation shall apply to new ships. However, at the same time a transitory arrangement has been determined so that existing ships shall comply with the provisions of this regulation on 1 April 2010 at the latest. For the purposes of this regulation, existing ships shall mean ships constructed before 1 April 2007.

In addition, for existing ships, a suitable inclusion may be used in stead of double-walled pipe systems in engines the output of which is not any higher than 375 kW and the fuel injection pumps of which supply more than one fuel nozzle.