09-410

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part D Machinery Installations

Rules for the Survey and Construction of Steel Ships
Part D 2009 AMENDMENT NO.2
Guidance for the Survey and Construction of Steel Ships
Part D 2009 AMENDMENT NO.2

Rule No.45 / Notice No.62 30th October 2009
Resolved by Technical Committee on 24th June 2009
Approved by Board of Directors on 28th July 2009

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NIPPON KAIJI KYOKAI

RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

RULES

Part D Machinery Installations

2009 AMENDMENT NO.2

Rule No.45 30th October 2009

Resolved by Technical Committee on 24th June 2009

Approved by Board of Directors on 28th July 2009

Rule No.45 30th October 2009
AMENDMENT TO THE RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Rules for the survey and construction of steel ships" has been partly amended as follows:

Part D MACHINERY INSTALLATIONS

Chapter 2 DIESEL ENGINES

2.4 Safety Devices

Paragraph 2.4.5 has been amended as follows.

2.4.5 Crankcase Oil Mist Detection Arrangements

1 Crankcase oil mist detection arrangements are required for diesel engines of 2,250 *kW* maximum continuous power and above or having cylinders of more than 300 *mm* bore, and in cases of engine failure, the following means are to automatically be employed. However, in cases where alternative devices deemed appropriate by the Society are provided, such devices may be used instead of crankcase oil mist detection arrangements.

(1) In the case of crosshead engines, alarms are to activate and speeds be reduced. (However, in cases where alternative measures such as activating alarms to request such speed reductions are taken, the manual reduction of speeds may be accepted).

(2) In the case of trunk piston engines, alarms are to activate and diesel engines are to be stopped or have their fuel supply shut off.

2 The ~~C~~crankcase oil mist detection arrangements required in **-1** above ~~to be fitted to engines~~ are to be of an approved type and in accordance with the following requirements:~~.~~

(1) The oil mist detection arrangements are to provide an alarm indication in the event of a foreseeable functional failure in the equipment and installation arrangements.

(2) The oil mist detection arrangements are to provide an indication that any lenses fitted in the equipment and used in determination of the oil mist level have been partially obscured to a degree that will affect the reliability of the information and alarm indication.

(3) The oil mist detection arrangements are to be capable of being tested on the test bed and board under engine at standstill and engine running at normal operating conditions.

(4) Oil mist ~~monitoring~~ detection and alarm information is to be capable of being read from a safe location away from the engine. However, in the case of ships which apply the **Rules for Automatic and Remote Control Systems**, the density of crankcase oil mist is also to be capable of being monitored.

(5) ~~Where there are multi-engine installations, e~~Each engine is to be provided with independent oil mist detection and monitoring and a dedicated alarm.

(6) The layout of the arrangements, pipes and cables, pipe dimensions, the location of engine crankcase sample points, sample extraction rate and the way of maintenance and test are to be in accordance with the engine designer's and oil mist manufacturer's instructions.

(7) Where sequential oil mist detection arrangements are provided, the sampling frequency and time is to be as short as reasonably practicable.

(8) A copy of the maintenance and test manual is to be provided on board ship.

Chapter 18 AUTOMATIC AND REMOTE CONTROL

18.3 Automatic and Remote Control of Main Propulsion Machinery or Controllable Pitch Propellers

18.3.4 Safety Measures

Sub-paragraph -1 has been amended as follows.

1 Safety measures for main propulsion machinery or controllable pitch propellers

Safety measures for main propulsion machinery or controllable pitch propellers are to comply with the following requirements :

(1) The following safety measures are to be taken to remote control devices for main propulsion machinery or controllable pitch propellers :
   (a) Necessary interlocking devices are to be provided to prevent serious damage due to misoperation.
   (b) Where the auxiliary machinery essential for main propulsion of the ship are driven by electric motors, the main propulsion machinery is to be so designed as to stop automatically in the event of failure of the main source of electrical power or to be capable of being stopped.
   (c) The main propulsion machinery is to be so arranged as not to restart automatically when electrical power is restored after the failure of the main source of electrical power whereas the main propulsion machinery was stopped.
   (d) The remote control devices for main propulsion machinery or controllable pitch propellers are to be so designed that the engine may not be abnormally overloaded in the event of failure of them.

(2) Stopping devices for main propulsion machinery are to be provided at the monitoring station for main propulsion machinery or controllable pitch propellers.

(3) With respect to safety measures for main propulsion machinery driven by diesel engines, the requirements specified in **2.4.5-1** are to be applied.

18.5 Automatic and Remote Control of Electric Generating Sets

18.5.1 General

Sub-paragraph -6 has been added as follows.

1 Electric generating sets arranged to be automatically or remotely started are to be provided with interlocking devices necessary for safe operation.

2 Electric generating sets (other than those used for emergency source of electrical power) arranged to be automatically started are to be so designed that the number of automatic consecutive attempts which fail to produce a start is limited to two times and to be provided with an alarm device which operate at the time of the failure of starting.

3 In case where a diesel engine to drive a propulsion generator is remotestarted the number of starting is to conform to the required number specified in **2.5.3**.

4 Where automatic start of the stand-by generating set with automatic connection to the

switchboard busbars is provided, automatic closure on to the busbars is to be limited to one attempt in the event of the original power failure being caused by short circuit.

5 Automatic control and remote control systems for the electric generating set, whose generator is driven by the main propulsion machinery and supplies electrical power to the electrical installations relating to the services specified in **3.1.2(1), Part H** and is operated while the main propulsion machinery is controlled by the bridge control devices are to comply with the requirements in **3.2.1, Part H**, in addition to those in this **18.5**.

6 With respect to safety measures for electric generating set driven by diesel engines, the requirements specified in **2.4.5-1** are to be applied.

18.5.2 Emergency Source of Electric Power

Automatic or remote control devices for diesel engines to drive emergency generators for non-emergency purposes are to be complied with the following requirements:

(1) Alarm devices to be activated in the event of the abnormal conditions given in **Table D18.2** are to be provided.

(2) Devices referred to in **(1)** are to provide alarms at both local and control positions. The visual alarms at control positions may be of group indication.

(3) Each diesel engine with a maximum continuous output of 220 *kW* or over is to be provided with an overspeed protective device specified in **2.4.1-4**.

(4) When devices to shutdown the diesel engines are provided other than those referred to in **(3)**, means are to be provided to override those devices automatically during navigation.

(5) The silencing of the audible alarms from the control positions is not to cause the silencing of the audible alarm at local position.

Table D18.2 has been amended as follows.

Table D18.2 Alarms for Diesel Engines to Drive Emergency Generators

Monitored Variables		Alarms	Remarks
Temperature	L.O. inlet	H	Applicable to engines with maximum continuous output of 220 *kW* or over.
	Cooling water or air outlet	H	
Pressure	L.O. inlet	L	
	Cooling water inlet	L	Applicable to engines with maximum continuous output of 220 *kW* or over. Low flow may be accepted.
Others	~~Oil mist concentration in crankcase~~	~~H~~	~~Applicable to engines with a maximum continuous output of 2,250 *kW* or over, or a cylinder bore of more than 300 *mm*.~~
	Leakage from F.O. burning pipe, level in leakage tank	○	
	Overspeed	○	Applicable to engines with maximum continuous output of 220 *kW* or over.

Note: "H" and "L" mean high and low. "○" means abnormal condition occurred.

18.6 Automatic and Remote Control of Auxiliary Machinery

Paragraph 18.6.9 has been amended as follows.

18.6.9 ~~Emergency~~ Diesel Engines

1 With respect to the safety measures for auxiliary machinery driven by diesel engines, the requirements specified in **2.4.5-1** are to be applied.

2 The requirements in **18.5.2** apply correspondingly to the automatic or remote control devices for emergency diesel engines used for non-emergency purposes other than those mentioned in **18.5.2**.

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 January 2010.

2. Notwithstanding the amendments to the Rules, the current requirements may apply to diesel engines whose date of application for certification is before the effective date and that are installed on ships for which the date of contract for construction* is before the effective date.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

(1) such alterations do not affect matters related to classification, or

(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.

The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.

GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

GUIDANCE

Part D Machinery Installations

2009 AMENDMENT NO.2

Notice No.62 30th October 2009

Resolved by Technical Committee on 24th June 2009

Notice No.62 30th October 2009
AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

"Guidance for the survey and construction of steel ships" has been partly amended as follows:

Part D MACHINERY INSTALLATIONS

Amendment 2-1

D2 DIESEL ENGINES

D2.4 Safety Devices

Paragraph D2.4.5 has been amended as follows.

D2.4.5 Crankcase Oil Mist Detection Arrangements
1 The wording "devices as deemed appropriate by the Society" specified in **2.4.5-1, Part D of the Rules** means to the types of temperature monitoring devices for main bearings, crankpin bearings and crosshead bearings approved by the Society or equivalent devices.
2 The wording "crankcase oil mist detection arrangements required to be fitted to engines are to be approved type" stipulated in **2.4.5-2, Part D of the Rules** refers to crankcase oil mist detection arrangement approved in accordance with **Chapter 6, Part 7 of the Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use**.

EFFECTIVE DATE AND APPLICATION (Amendment 2-1)

1. The effective date of the amendments is 1 January 2010.

2. Notwithstanding the amendments to the Guidance, the current requirements may apply to diesel engines whose date of application for certification is before the effective date and that are installed on ships for which the date of contract for construction* is before the effective date.

* "contract for construction" is defined in the latest version of IACS Procedural Requirement (PR) No.29.

IACS PR No.29 (Rev.0, July 2009)

1. The date of "contract for construction" of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.

2. The date of "contract for construction" of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a "series of vessels" if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:

(1) such alterations do not affect matters related to classification, or

(2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.

The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional vessels or additional options, the date of "contract for construction" for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a "new contract" to which **1.** and **2.** above apply.

4. If a contract for construction is amended to change the ship type, the date of "contract for construction" of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:
This Procedural Requirement applies from 1 July 2009.

Amendment 2-2

Annex D12.1.6-2 GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF PLASTIC PIPES

Section 1.7 has been amended as follows.

1.7 Shop Tests

1 Plastic pipes except for piping systems specified in **1.3-2** are to be subjected to the following tests and measurements of dimension after the manufacture. The number of test specimens, testing procedures, results, procedures of measurement of dimension and tolerance are to be complied with the manufacturer's approved by the Society.

(1) Tensile test
(2) Hydrostatic test (a hydrostatic pressure not less than 1.5 times the nominal pressure) or hydrostatic tests stipulated in standards considered equivalent by the Society
(3) Outside diameter and wall thickness measurements
(4) Ascertainment of uniform quality and no harmful defect
(5) Electric conductivity test (only for pipes required for electric conductivity by **1.5.4**)

2 For tests and measurements specified in **-1**, in case where the manufacture has been assessed in accordance with "**Rules for Approval of Manufacturers and Service Suppliers**", testing items under the Surveyor's attendance may be reduced. In this case, the Society's Surveyor may require submission of the test results.

3 Plastic pipes with connections by adhesive bonding, laminating, welding, etc. are to be subjected to hydrostatic tests after completion of all the fabrication process at a pressure of 1.5 times the design pressure. (refer **D1.1.4(7)**) This test may be carried out after installation on board.

4 Notwithstanding the requirements specified in **-1**, the Society may request hydrostatic tests for all plastic pipes at a hydrostatic pressure not less than 1.5 times the nominal pressure taking into consideration the pipe service conditions.

EFFECTIVE DATE AND APPLICATION (Amendment 2-2)

1. The effective date of the amendments is 1 January 2010.
2. Notwithstanding the amendments to the Guidance, the current requirements apply to the surveys for which the application is submitted to the Society before the effective date.
3. Notwithstanding the provision of preceding **2.**, the amendments to the Guidance may apply to the surveys for which the application is submitted to the Society before the effective date upon request by the owner.