# RULES FOR PREVENTIVE MACHINERY MAINTENANCE SYSTEMS

RULES

**2020 AMENDMENT NO.1**

Rule No.58 30 June 2020

Resolved by Technical Committee on 22 January 2020

An asterisk (*) after the title of a requirement indicates that there is also relevant information in the corresponding Guidance.

Rule No.58 30 June 2020
AMENDMENT TO THE RULES FOR PREVENTIVE MACHINERY MAINTENANCE SYSTEMS

"Rules for preventive machinery maintenance systems" has been partly amended as follows:

Amendment 1-1

# Chapter 2 SURVEYS

## 2.1 General

### 2.1.2 Period of Surveys

Sub-paragraph -2(4) has been amended as follows.

**2** Registration Maintenance Surveys are to be carried out at the following intervals:
((1) to (3) are omitted.)
(4) The classed ships may be subject to Unscheduled Surveys when the confirmation of the status of systems by survey is deemed necessary in cases where the Society ~~suspects systems of not being in continued compliance with the Rules and Regulations of the Society, and of not being properly maintained and operated by the ship owner~~ considers the systems to be subject to **1.4-3** of the **CONDITIONS OF SERVICE FOR CLASSIFICATION OF SHIPS AND REGISTRATION OF INSTALLATIONS**.

EFFECTIVE DATE AND APPLICATION (Amendment 1-1)

**1.** The effective date of the amendments is 30 June 2020.

Amendment 1-2

# Chapter 3 PREVENTIVE MACHINERY MAINTENANCE SYSTEMS

## 3.2 Condition Monitoring and Diagnosis Systems

Paragraph 3.2.2 has been amended as follows.

### 3.2.2 Equipment~~s~~ and Components subject to Monitoring and Diagnosis Scheme

The items of equipment and their components subject to monitoring and diagnosis scheme are to include the following **(1)** through **(4)**:

(1) ~~Main diesel~~ Reciprocating internal combustion engines used as main propulsion machinery
  (a) Parts around combustion chambers
  (b) Main bearings
  (c) Turbochargers

(2) ~~Main t~~Turbines used as main propulsion machinery
  (a) Turbine rotors
  (b) Turbine rotor bearings
  (c) Rotor thrust bearings

(3) Propulsion power transmission systems
  ((a) and (b) are omitted.)

(4) Prime movers driving generators
  (a) ~~Diesel~~ Reciprocating internal combustion engines
  (b) Steam turbines

Paragraph 3.2.3 has been amended as follows.

### 3.2.3 Condition Monitoring and Diagnostic Functions for ~~Main Diesel~~ Reciprocating Internal Combustion Engines used as Main Propulsion Machinery*

Condition monitoring and diagnostic functions for ~~main diesel~~ reciprocating internal combustion engines used as main propulsion machinery are, at ~~the very~~ least, to comply with the following requirements **(1)** through **(8)**:

((1) to (8) are omitted.)

Paragraph 3.2.4 has been amended as follows.

### 3.2.4 Condition Monitoring and Diagnostic Functions for ~~Main~~ Turbines used as Main Propulsion Machinery*

Condition monitoring and diagnostic functions for ~~main~~ turbines are, at the very least, to comply with the following requirements **(1)** through **(5)**:

((1) and (2) are omitted.)

(3) Condition of the lubricating oil of ~~main~~ turbines is to be monitored.

((4) and (5) are omitted.)

### 3.2.6 Condition Monitoring and Diagnostic Functions for Prime Movers Driving Generators*

Sub-paragraph (1) has been amended as follows.

Condition monitoring and diagnostic functions for prime movers driving generators are, at the very least, to comply with the following requirements:

(1) ~~Diesel~~ Reciprocating internal combustion engines driving main generators
   (a) Condition monitoring sensors are to be provided for temperature, pressure and all other operating parameters given in **Table 3.3**.
   (b) Condition of the lubricating oil of engines is to be monitored.
   (c) Condition monitoring and diagnostic systems are to have functions for monitoring the condition of engines based on data from those sensors specified in **(a)** and the condition of those lubricating oils specified in **(b)** above.
   (d) Condition monitoring and diagnostic systems are to have functions for diagnosing the condition of engines based on the information specified in **(c)** above.

(2) Turbines driving main generators
   ((a) to (d) are omitted.)

Table 3.1 has been amended as follows.

Table 3.1 Reciprocating Internal Combustion Engines used as Main Propulsion Machinery ~~Diesel Engines~~ (and Gearing)

| Monitored Variables | Remarks |
|---|---|
| Temperature | |
| (Omitted) | |
| Pressure | |
| (Omitted) | |
| Common accumulator fuel oil pressure | for electronically-controlled ~~diesel~~ engines (only when they have common accumulators) |
| Common accumulators or high pressure pipe hydraulic oil pressure | for electronically-controlled ~~diesel~~ engines |
| (Omitted) | |
| Others | |
| (Omitted) | |

Title of Table 3.2 has been amended as follows.

Table 3.2 ~~Main Propulsion~~ Steam Turbines used as Main Propulsion Machinery (and Gearing Condensers)

Table 3.3 has been amended as follows.

Table 3.3 Prime Movers Driving Generators

| Monitored Variables | Remarks |
|---|---|
| ~~Diesel~~ Reciprocating internal combustion engines ~~for~~ driving generators | |
| Temperature | |
| L.O. inlets | |
| Cooling water or air outlets | |
| Exhaust gas for each turboblower inlet or each cylinder outlet | Required for each cylinder outlet for engines with max. continuous power exceeding 500 *kW*/cylinder |
| F.O. injection pump inlets | or viscosity, applied in cases where viscosity control of F.O. is performed |
| Pressure | |
| L.O. inlets | |
| Common accumulators fuel oil pressure | for electronically-controlled ~~diesel~~ engines (only when they have common accumulators) |
| Common accumulators or high pressure pipe hydraulic oil pressure | for electronically-controlled ~~diesel~~ engines |
| Cooling water inlets | or flow, or high temperature of cooling water outlets |
| Starting air | |
| Other | |
| Oil mist concentrations in crankcases | or bearing temperatures; however, not required for engines with maximum continuous outputs less than 2,250 *kW* and cylinder diameters of 300 *mm* or less |
| Steam turbines driving ~~for~~ generators | |
| Temperature | |
| L.O. inlets | |
| Pressure | |
| L.O. inlets | |
| Steam inlets | In the cases of ~~steam turbine~~ ships in which steam turbines are used as main propulsion machinery (excluding electric propulsion ships), applied in cases where extracted steam is used |
| Exhaust steam | |

EFFECTIVE DATE AND APPLICATION (Amendment 1-2)

**1.** The effective date of the amendments is 1 July 2020.

**2.** Notwithstanding the amendments to the Rules, the current requirements apply to ships for which the date of contract for construction is before the effective date.

# GUIDANCE FOR PREVENTIVE MACHINERY MAINTENANCE SYSTEMS

GUIDANCE

**2020 AMENDMENT NO.1**

Notice No.33 30 June 2020

Resolved by Technical Committee on 22 January 2020

Notice No.33 30 June 2020
AMENDMENT TO THE GUIDANCE FOR PREVENTIVE MACHINERY MAINTENANCE SYSTEMS

"Guidance for preventive machinery maintenance systems" has been partly amended as follows:

# Chapter 3 PREVENTIVE MACHINERY MAINTENANCE SYSTEMS

## 3.2 Condition Monitoring and Diagnosis Systems

Title of Paragraph 3.2.3 has been amended as follows.

### 3.2.3 Condition Monitoring and Diagnostic Functions for ~~Main Diesel~~ Reciprocating Internal Combustion Engines used as Main Propulsion Machinery

Title of Paragraph 3.2.4 has been amended as follows.

### 3.2.4 Condition Monitoring and Diagnostic Functions for ~~Main~~ Turbines used as Main Propulsion Machinery

Sub-paragraph -2 has been amended as follows.

**2** The wording "Condition of the lubricating oil of ~~main~~ turbines is to be monitored" used in **3.2.4(3) of the Rules** means that deterioration trend data is to be confirmed by periodical analysis of the properties of lubricating oil.

EFFECTIVE DATE AND APPLICATION

**1.** The effective date of the amendments is 1 July 2020.
**2.** Notwithstanding the amendments to the Guidance, the current requirements apply to ships for which the date of contract for construction is before the effective date.