Requirements for Electrical Installations of Dynamic Positioning Systems

Object of Amendment

Rules for the Survey and Construction of Steel Ships Parts B, H, and P
Rules for the Survey and Construction of Inland Waterway Ships

Reason for Amendment

In recent years, the growing demand for offshore wind power generation has led to an increase in the construction of special-purpose work vessels, such as Self-Elevating Platforms (SEP). Such vessels may be equipped with Dynamic Positioning Systems (DPS), and requirements for said systems have already been incorporated into the Rules for the Survey and Construction of Steel Ships Part P.

Among these requirements, the ones related to the submission of drawings and survey of electric installations used for DPS were unclear. Moreover, there were some unclear points regarding shop tests for rotating machines including those not used for DPS.

Accordingly, relevant requirements are amended for the purpose of clarification.

Outline of Amendment

The main details of this amendment are as follows:

(1) Specifies requirements related to the submission of drawings and survey of electric installations used for DPS.
(2) Clarifies requirements related to overcurrent and excess torque tests for rotating machines.

Effective Date and Application

(1) Rules for the Survey and Construction of Steel Ships Parts B and P
This amendment applies to ships for which the date of contract for construction is on or after 1 January 2026.
(2) Rules for the Survey and Construction of Steel Ships Part P and Rules for the Survey and Construction of Inland Waterway Ships
This amendment applies to rotating machines for which the application for survey is submitted to the Society on or after 1 January 2026.

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

ID:DD25-15

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part B CLASS SURVEYS** **Chapter 12 SURVEYS FOR MOBILE OFFSHORE DRILLING UNITS AND SPECIAL PURPOSE BARGES** **12.2 Classification Survey during Construction** **12.2.2 Submission of Plans and Documents*** **1** With respect to the Classification Survey during Construction, the following plans and documents are to be submitted as plans and documents for approval before the work is commenced. (1) (Omitted) (2) Machinery (a) For Machinery installations relating to the safety of the unit and installations or systems related to the propulsion of the unit (only applicable to unit's with main propulsion machinery): plans and documents required in the relevant Chapters in **Part D**. (b) For machinery installations used solely for operation that is the purpose of the unit, plans and documents specified in **Chapters 9** and **10, Part D**	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part B CLASS SURVEYS** **Chapter 12 SURVEYS FOR MOBILE OFFSHORE DRILLING UNITS AND SPECIAL PURPOSE BARGES** **12.2 Classification Survey during Construction** **12.2.2 Submission of Plans and Documents*** **1** With respect to the Classification Survey during Construction, the following plans and documents are to be submitted as plans and documents for approval before the work is commenced. (1) (Omitted) (2) Machinery (a) For Machinery installations relating to the safety of the unit and installations or systems related to the propulsion of the unit (only applicable to unit's with main propulsion machinery): plans and documents required in the relevant Chapters in **Part D**. (b) For machinery installations used solely for operation that is the purpose of the unit, plans and documents specified in **Chapters 9** and **10, Part D**	

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
(c) For self-elevating units, the plans and documents specified in **11.1.14-1(1), Part P** (d) For units with a dynamic positioning system, the following plans. i) Arrangement and configuration of the dynamic positioning system ii) Construction and control diagrams of the dynamic positioning system iii) Electrical installations used for dynamic positioning systems (As specified in **1.1.6, Part H**. The wording "electric propulsion" specified in **1.1.6(1) (a), (b) and (g), Part H** and **1.1.6(2) (a), Part H** is to be interpreted to mean "dynamic positioning system".) (e) For units complying with **12.1.1-3**, testing procedures for machinery and electrical provisions or installations (f) Other plans and/or documents deemed necessary by the Society (3) (Omitted)	(c) For self-elevating units, the plans and documents specified in **11.1.14-1(1), Part P** (d) For units with a dynamic positioning system, the following plans. i) Arrangement and configuration of the dynamic positioning system ii) Construction and control diagrams of the dynamic positioning system (Newly added) (e) For units complying with **12.1.1-3**, testing procedures for machinery and electrical provisions or installations (f) Other plans and/or documents deemed necessary by the Society (3) (Omitted)	Specifies drawings of electric installation used for DPS.
12.2.3 Survey* **1** During the Classification Survey, the items specified in following **(1)** to **(7)** are to be implemented. To implement surveys of items specified otherwise by the Society, in lieu of traditional ordinary surveys where the Surveyor is in attendance, the Society may approve other survey methods which it considers to be appropriate in the following cases. (1) The survey items specified in **2.1.7**, **12.2.4** and **12.2.6** (2) For machinery and electrical installations, the tests, examinations or inspections specified in **11.1.3** and **12.1.3, Part P**	**12.2.3 Survey*** **1** During the Classification Survey, the items specified in following **(1)** to **(7)** are to be implemented. To implement surveys of items specified otherwise by the Society, in lieu of traditional ordinary surveys where the Surveyor is in attendance, the Society may approve other survey methods which it considers to be appropriate in the following cases. (1) The survey items specified in **2.1.7**, **12.2.4** and **12.2.6** (2) For machinery and electrical installations, the tests, examinations or inspections specified in **11.1.3** and **12.1.3, Part P**	

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
(3) For column-stabilized units, the draught scales are fitted (4) For large storage units, the operation test of rupture hatches at a pressure below the design operational pressure (5) For units requiring the mooring system specified in **Chapter 10, Part P**, confirmation survey for system installation on the unit (6) For units with a dynamic positioning system specified in **Chapter 10, Part P**, the following **(a)** to **(d)**. (a) Confirmation survey for components of the dynamic positioning system installation on the unit (b) Tests are carried out in accordance with the testing procedures. (c) For units with a Class 2 or Class 3 dynamic positioning system, tests for Failure Modes and Effects Analysis (*FMEA*) in accordance with testing procedures of demonstration tests. (d) Tests specified in **12.1.3, Part P** in the case of systems or equipment used for dynamic positioning systems. (7) For mobile offshore drilling units, confirmation survey the completion of each part of drilling derricks and substructures including supporting structures of drilling derricks and installation of drilling derricks and substructures on board.	(3) For column-stabilized units, the draught scales are fitted (4) For large storage units, the operation test of rupture hatches at a pressure below the design operational pressure (5) For units requiring the mooring system specified in **Chapter 10, Part P**, confirmation survey for system installation on the unit (6) For units with a dynamic positioning system specified in **Chapter 10, Part P**, the following **(1)** to **(3).** (a) Confirmation survey for components of the dynamic positioning system installation on the unit (b) Tests are carried out in accordance with the testing procedures. (c) For units with a Class 2 or Class 3 dynamic positioning system, tests for Failure Modes and Effects Analysis (*FMEA*) in accordance with testing procedures of demonstration tests. (Newly added) (7) For mobile offshore drilling units, confirmation survey the completion of each part of drilling derricks and substructures including supporting structures of drilling derricks and installation of drilling derricks and substructures on board.	Specifies survey of electric installation used for DPS.
The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A)		

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part H ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN** **2.4 Rotating Machines** **2.4.5 Overload and Overcurrent Capability*** Rotating machines are to withstand the following overcurrent or torque tests by maintaining their voltage, rotating speed and frequency as near to their rated values as possible. In the case of special types of deck machinery motors (winch, windlass, capstan, etc.), overload scaling may be dealt with as considered appropriate by the Society. (1) Overcurrent capability (a) *A.C.* generators 150 % of rated current for 30 *seconds* (b) *A.C.* motors (except commutator motors and permanent magnet motors) 150 % of rated current for 2 *minutes*. However, in the case of *A.C.* motors having rated outputs exceeding 315 *kW* or rated voltages exceeding 1 *kV*, the load and time of overcurrent capability may be increased or decreased in	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part H ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN** **2.4 Rotating Machines** **2.4.5 Overload and Overcurrent Capability*** Rotating machines are to withstand the following overcurrent or torque tests by maintaining their voltage, rotating speed and frequency as near to their rated values as possible. In the case of special types of deck machinery motors (winch, windlass, capstan, etc.), overload scaling may be dealt with as considered appropriate by the Society. (1) Overcurrent capability (a) *A.C.* generators 150 % of rated current for 30 *seconds* (b) *A.C.* motors 150 % of rated current for 2 *minutes*. However, in the case of *A.C.* motors having rated outputs exceeding 315 *kW* or rated voltages exceeding 1 *kV*, the load and time of overcurrent capability may be increased or decreased in	Specifies commutator motors and permanent magnet motors are exempted from application.in accordance with 9.3.3, IEC60034-1:2017.

Amended	Original	Remarks
consideration of use conditions and the like. (c) *D.C.* generators 150 % of rated current Rated output (*kW*) / Rated rotating speed (*rpm*) ≤ 1 for 45 *seconds* Rated output (*kW*) / Rated rotating speed (*rpm*) > 1 for 30 *seconds* (2) Excess torque capability (a) Polyphase induction motors and *d.c.* motors 160 % of rated torque for 15 *seconds* (b) Polyphase synchronous motors i) Synchronous (wound rotor) induction motors 135 % of rated torque for 15 *seconds* ii) Synchronous (cylindrical rotor) induction motors 135 % of rated torque for 15 *seconds* iii) Synchronous (salient pole) induction motors 150 % of rated torque for 15 *seconds* **2.4.15 Shop Tests*** Rotating machines are to be tested in the following **(1)** to **(13)** in accordance with **Table H2.6**. In addition, all tests are to be carried out in accordance with *IEC* 60092-301:1980/AMD2:1995. However, those tests required by **(5)** and **(7)** below may be omitted subject to the Society's permission for each generator or motor which is produced in series having identical type with their unit. Furthermore, those tests required by **(6)** below may be omitted for each generator or motor which is of small capacity and which is produced in a series of identical types with their unit. ((1) to (5) are omitted.)	consideration of use conditions and the like. (c) *D.C.* generators 150 % of rated current Rated output (*kW*) / Rated rotating speed (*rpm*) ≤ 1 for 45 *seconds* Rated output (*kW*) / Rated rotating speed (*rpm*) > 1 for 30 *seconds* (2) Excess torque capability (a) Polyphase induction motors and *d.c.* motors 160 % of rated torque for 15 *seconds* (b) Polyphase synchronous motors i) Synchronous (wound rotor) induction motors 135 % of rated torque for 15 *seconds* ii) Synchronous (cylindrical rotor) induction motors 135 % of rated torque for 15 *seconds* iii) Synchronous (salient pole) induction motors 150 % of rated torque for 15 *seconds* **2.4.15 Shop Tests*** Rotating machines are to be tested in the following **(1)** to **(13)** in accordance with **Table H2.6**. In addition, all tests are to be carried out in accordance with *IEC* 60092-301:1980/AMD2:1995. However, those tests required by **(5)** and **(7)** below may be omitted subject to the Society's permission for each generator or motor which is produced in series having identical type with their unit. Furthermore, those tests required by **(6)** below may be omitted for each generator or motor which is of small capacity and which is produced in a series of identical types with their unit. ((1) to (5) are omitted.)	

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
(6) The test is to be carried out for generators as a proof of overload capability of generators and excitation system and for motors as a proof of momentary excess torque (see *IEC* 60034-1:2017) in accordance with **2.4.5**. However, for the second and subsequent units of generators or motors produced in a series of identical types, said tests may be replaced by an overcurrent test satisfying the requirements of 2.4.5, subject to the Society's permission. The overcurrent test can be done at reduced speed (motors) or at short circuit (generators). ((7) to (13) are omitted.)	(6) Overcurrent or excess torque tests for rotating machines are to be carried out in accordance with **2.4.5**, and such machines are to have the capability to withstand such tests (see *IEC* 60034-1:2017). ((7) to (13) are omitted.)	Consistent with 4.6, UR E13(Rev.3)
The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (B)		

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS **Part P MOBILE OFFSHORE DRILLING UNITS AND SPECIAL PURPOSE BARGES** **Chapter 12 ELECTRICAL INSTALLATIONS** **12.1 General** **12.1.3 Tests*** **1** Electrical installations used for the systems or the equipment essential for the safety of the unit or for the propulsion of the unit (only applicable to the unit which has the main propulsion machinery) or dynamic positioning system specified in **Chapter 10,** and listed in the following **(1)** to **(5)** are to be tested in accordance with the respective requirements in **Part H** at the manufacturer's works or at other works which provide with the adequate apparatus for testing and inspections. However, tests for any equipment with small capacities as specified in **(2)** and **(3)** are to be conducted as deemed appropriate by the Society. (1) Generators (2) Motors (3) Control gears for motors (4) Main and emergency switchboards (5) Transformers for power and lighting of single phase 1*kVA* or more and three phase 5*kVA* or more	**RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS** **Part P MOBILE OFFSHORE DRILLING UNITS AND SPECIAL PURPOSE BARGES** **Chapter 12 ELECTRICAL INSTALLATIONS** **12.1 General** **12.1.3 Tests*** **1** Electrical installations used for the systems or the equipment essential for the safety of the unit or for the propulsion of the unit (only applicable to the unit which has the main propulsion machinery) and listed in the following **(1)** to **(5)** are to be tested in accordance with the respective requirements in **Part H** at the manufacturer's works or at other works which provide with the adequate apparatus for testing and inspections. However, tests for any equipment with small capacities as specified in **(2)** and **(3)** are to be conducted as deemed appropriate by the Society. (1) Generators (2) Motors (3) Control gears for motors (4) Main and emergency switchboards (5) Transformers for power and lighting of single phase 1*kVA* or more and three phase 5*kVA* or more	Specifies survey of electric installation used for DPS.

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (A)		

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS **Part 8 ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN** **2.4 Rotating Machines** **2.4.5 Overload and Overcurrent Capability*** Rotating machines are to withstand the following overcurrent or torque tests by maintaining their voltage, rotating speed and frequency as near to their rated values as possible. In the case of special types of deck machinery motors (winch, windlass, capstan, etc.), overload scaling may be dealt with as considered appropriate by the Society. (1) Overcurrent capability (a) *A.C.* generators 150% of rated current for 30 *seconds* (b) *A.C.* motors <u>(except commutator motors and permanent magnet motors)</u> 150 % of rated current for 2 *minutes.* However, in the case of *A.C.* motors having rated outputs exceeding 315 *kW* or rated voltages exceeding 1 *kV*, the load and time of overcurrent	**RULES FOR THE SURVEY AND CONSTRUCTION OF INLAND WATERWAY SHIPS** **Part 8 ELECTRICAL INSTALLATIONS** **Chapter 2 ELECTRICAL INSTALLATIONS AND SYSTEM DESIGN** **2.4 Rotating Machines** **2.4.5 Overload and Overcurrent Capability*** Rotating machines are to withstand the following overcurrent or torque tests by maintaining their voltage, rotating speed and frequency as near to their rated values as possible. In the case of special types of deck machinery motors (winch, windlass, capstan, etc.), overload scaling may be dealt with as considered appropriate by the Society. (1) Overcurrent capability (a) *A.C.* generators 150% of rated current for 30 *seconds* (b) *A.C.* motors 150 % of rated current for 2 *minutes.* However, in the case of *A.C.* motors having rated outputs exceeding 315 *kW* or rated voltages exceeding 1 *kV*, the load and time of overcurrent	Specifies commutator motors and permanent magnet motors are exempted from application.in accordance with 9.3.3, IEC60034-1:2017.

Amended	Original	Remarks
capability may be increased or decreased in consideration of use conditions and the like. (c) *D.C.* generators 150% of rated current Rated output (*kW*) / Rated rotating speed (*rpm*) ≤1 for 45 *seconds* Rated output (*kW*) / Rated rotating speed (*rpm*) >1 for 30 *seconds* (2) Excess torque capability (a) Polyphase induction motors and *d.c.* motors 160% of rated torque for 15 *seconds* (b) Polyphase synchronous motors i) Synchronous (wound rotor) induction motors 135 % of rated torque for 15 *seconds* ii) Synchronous (cylindrical rotor) induction motors 135 % of rated torque for 15 *seconds* iii) Synchronous (salient pole) induction motors 150 % of rated torque for 15 *seconds* **2.4.15 Shop Tests*** Rotating machines are to be tested in the following **(1)** to **(13)** in accordance with **Table 8.2.5**. In addition, all tests are to be carried out in accordance with *IEC* 60092-301:1980/AMD2:1995. However, those tests required by **(5)** and **(7)** below may be omitted subject to the Society's permission for each generator or motor which is produced in series having identical type with their unit. Furthermore, those tests required by **(6)** below may be omitted for each generator or motor which is of small capacity and which is produced in a series of identical types with their unit.	capability may be increased or decreased in consideration of use conditions and the like. (c) *D.C.* generators 150% of rated current Rated output (*kW*) / Rated rotating speed (*rpm*) ≤1 for 45 *seconds* Rated output (*kW*) / Rated rotating speed (*rpm*) >1 for 30 *seconds* (2) Excess torque capability (a) Polyphase induction motors and *d.c.* motors 160% of rated torque for 15 *seconds* (b) Polyphase synchronous motors i) Synchronous (wound rotor) induction motors 135 % of rated torque for 15 *seconds* ii) Synchronous (cylindrical rotor) induction motors 135 % of rated torque for 15 *seconds* iii) Synchronous (salient pole) induction motors 150 % of rated torque for 15 *seconds* **2.4.15 Shop Tests*** Rotating machines are to be tested in the following **(1)** to **(13)** in accordance with **Table 8.2.5**. In addition, all tests are to be carried out in accordance with *IEC* 60092-301:1980/AMD2:1995. However, those tests required by **(5)** and **(7)** below may be omitted subject to the Society's permission for each generator or motor which is produced in series having identical type with their unit. Furthermore, those tests required by **(6)** below may be omitted for each generator or motor which is of small capacity and which is produced in a series of identical types with their unit.	

Amended-Original Requirements Comparison Table (Requirements for Electrical Installations of Dynamic Positioning Systems)

Amended	Original	Remarks
((1) to (5) are omitted.) (6) The test is to be carried out for generators as a proof of overload capability of generators and excitation system and for motors as a proof of momentary excess torque (see *IEC* 60034-1:2017) in accordance with **2.4.5**. However, for the second and subsequent units of generators or motors produced in a series of identical types, said tests may be replaced by an overcurrent test satisfying the requirements of 2.4.5, subject to the Society's permission. The overcurrent test can be done at reduced speed (motors) or at short circuit (generators). ((7) to (13) are omitted.)	((1) to (5) are omitted.) (6) Overcurrent or excess torque tests for rotating machines are to be carried out in accordance with **2.4.5**, and such machines are to have the capability to withstand such tests (see *IEC* 60034-1:2017). ((7) to (13) are omitted.)	Consistent with 4.6, UR E13(Rev.3)
The effective date of the amendment is according to EFFECTIVE DATE AND APPLICATION (B)		
AEFFECTIVE DATE AND APPLICATION (A) **1.** The effective date of the amendments is 1 January 2026. **2.** Notwithstanding the amendments, the current requirements apply to ships for which the date of contract for construction is before the effective date. AEFFECTIVE DATE AND APPLICATION (B) **1.** The effective date of the amendments is 1 January 2026. **2.** Notwithstanding the amendments, the current requirements apply to the surveys for which the application is submitted to the Society before the effective date.		