# **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 Compa	arison Table (Requ	uirements for Electrical	Installations of Dynam	ic Positioning Systems)
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Amended-Original Requirements Comparison Table (1	Requirements for Electrical Installations of Dynamic Po	sitioning Systems)
Amended	Original	Remarks
RULES FOR THE SURVEY AND	RULES FOR THE SURVEY AND	
CONSTRUCTION OF STEEL SHIPS	CONSTRUCTION OF STEEL SHIPS	
	CONSTRUCTION OF STEED SITES	
Part B CLASS SURVEYS	Part B CLASS SURVEYS	
Chapter 12 SURVEYS FOR MOBILE	Chapter 12 SURVEYS FOR MOBILE	
OFFSHORE DRILLING UNITS AND SPECIAL	OFFSHORE DRILLING UNITS AND SPECIAL	
PURPOSE BARGES	PURPOSE BARGES	
TOTAL OSE BARROLS	TORT OSE BIRROES	
12.2 Classification Survey during Construction	12.2 Classification Survey during Construction	
12.2.2 Submission of Plans and Documents*	12.2.2 Submission of Plans and Documents*	
1 With respect to the Classification Survey during	1 With respect to the Classification Survey during	
Construction, the following plans and documents are to be	Construction, the following plans and documents are to be	
submitted as plans and documents for approval before the	submitted as plans and documents for approval before the	
work is commenced.	work is commenced.	
(1) (Omitted)	(1) (Omitted)	
(2) Machinery	(2) Machinery	
(a) For Machinery installations relating to the safety	(a) For Machinery installations relating to the safety	
of the unit and installations or systems related to	of the unit and installations or systems related to	
the propulsion of the unit (only applicable to	the propulsion of the unit (only applicable to	
unit's with main propulsion machinery): plans	unit's with main propulsion machinery): plans	
and documents required in the relevant Chapters	and documents required in the relevant Chapters	
in Part D.	in Part D.	
(b) For machinery installations used solely for	(b) For machinery installations used solely for	
operation that is the purpose of the unit, plans and	operation that is the purpose of the unit, plans and	
documents specified in Chapters 9 and 10, Part	documents specified in Chapters 9 and 10, Part	
D	D	

	Commission Description Commission	
Amended	Original 11 11 11 11 11 11 11 11 11 11 11 11 11	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)	<ul> <li>(c) For self-elevating units, the plans and documents specified in 11.1.14-1(1), Part P</li> <li>(d) For units with a dynamic positioning system, the following plans. <ol> <li>i) Arrangement and configuration of the dynamic positioning system</li> <li>ii) Construction and control diagrams of the dynamic positioning system</li> <li>(Newly added)</li> </ol> </li> <li>(e) For units complying with 12.1.1-3, testing procedures for machinery and electrical provisions or installations</li> <li>(f) Other plans and/or documents deemed necessary by the Society</li> <li>(3) (Omitted)</li> </ul>	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 confinence surveys where the Surveyor is in	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 and party surveys, where the Surveyor is in	
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	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	

7 KIIICIIC	Amended	ccquire	Original	Remarks
(3)	For column-stabilized units, the draught scales are	(3)	For column-stabilized units, the draught scales are	Remarks
	fitted	( )	fitted	
(4)	For large storage units, the operation test of rupture	(4)	For large storage units, the operation test of rupture	
	hatches at a pressure below the design operational pressure		hatches at a pressure below the design operational pressure	
(5)	For units requiring the mooring system specified in	(5)	For units requiring the mooring system specified in	
	Chapter 10, Part P, confirmation survey for system		Chapter 10, Part P, confirmation survey for system	
(6)	installation on the unit For units with a dynamic positioning system specified	(6)	installation on the unit For units with a dynamic positioning system specified	
(0)	in Chapter 10, Part P, the following (a) to (d).	(0)	in Chapter 10, Part P, the following (1) to (3).	
	(a) Confirmation survey for components of the		(a) Confirmation survey for components of the	
	dynamic positioning system installation on the unit		dynamic positioning system installation on the unit	
	(b) Tests are carried out in accordance with the		(b) Tests are carried out in accordance with the	
	testing procedures.		testing procedures.	
	(c) For units with a Class 2 or Class 3 dynamic		(c) For units with a Class 2 or Class 3 dynamic	Specifies survey of
	positioning system, tests for Failure Modes and		positioning system, tests for Failure Modes and	Specifies survey of electric installation used
	Effects Analysis ( <i>FMEA</i> ) in accordance with		Effects Analysis (FMEA) in accordance with	for DPS.
	testing procedures of demonstration tests.  (d) Tests specified in 12.1.3, Part P in the case of		testing procedures of demonstration tests. (Newly added)	
	systems or equipment used for dynamic		inewly added	
	positioning systems.			
(7)	For mobile offshore drilling units, confirmation	(7)	For mobile offshore drilling units, confirmation	
	survey the completion of each part of drilling derricks		survey the completion of each part of drilling derricks	
	and substructures including supporting structures of		and substructures including supporting structures of drilling derricks and installation of drilling derricks	
	drilling derricks and installation of drilling derricks and substructures on board.		and substructures on board.	
	and substructures on board.		and baoon actures on court.	
	The effective date of the amendment is according	g to EFF	ECTIVE DATE AND APPLICATION (A)	
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Amended-Original Requirements Compa	arison Table (Requ	uirements for Electrical	Installations of Dynam	ic Positioning Systems)
i innenaca eriginal recomments cempa	1115011 10010 (1ted)	CHICATOR TO ELECTRICAL	installations of Byllain.	

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

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

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 <i>IEC</i> 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 <i>IEC</i> 60034-1:2017).	Consistent with 4.6, UR E13(Rev.3)
The effective date of the amendment is according	g to EFFECTIVE DATE AND APPLICATION (B)	

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

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



Amended-Original Requirements Compar	rison Table (Requirement	nts for Electrical Installations	of Dynamic	Positioning Systems)
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Amended-Original Requirements Comparison Table (1		0 1
Amended	Original	Remarks
RULES FOR THE SURVEY AND	RULES FOR THE SURVEY AND	
CONSTRUCTION OF INLAND WATERWAY	CONSTRUCTION OF INLAND WATERWAY	
SHIPS	SHIPS	
Part 8 ELECTRICAL INSTALLATIONS	Part 8 ELECTRICAL INSTALLATIONS	
Chapter 2 ELECTRICAL INSTALLATIONS	Chapter 2 ELECTRICAL INSTALLATIONS	
AND SYSTEM DESIGN	AND SYSTEM DESIGN	
2.4 Rotating Machines	2.4 Rotating Machines	
2.4.5 Overload and Overcurrent Capability*	2.4.5 Overload and Overcurrent Capability*	
Rotating machines are to withstand the following	Rotating machines are to withstand the following	
overcurrent or torque tests by maintaining their voltage,	overcurrent or torque tests by maintaining their voltage,	
rotating speed and frequency as near to their rated values as	rotating speed and frequency as near to their rated values as	
possible. In the case of special types of deck machinery motors	possible. In the case of special types of deck machinery motors	
(winch, windlass, capstan, etc.), overload scaling may be dealt	(winch, windlass, capstan, etc.), overload scaling may be dealt	
with as considered appropriate by the Society.	with as considered appropriate by the Society.	
(1) Overcurrent capability	(1) Overcurrent capability	
(a) A.C. generators	(a) A.C. generators	
150% of rated current for 30 seconds	150% of rated current for 30 seconds	Specifies commutator
(b) A.C. motors (except commutator motors and	(b) A.C. motors	motors and permanent
permanent magnet motors)		magnet motors are
150 % of rated current for 2 minutes.	150 % of rated current for 2 minutes.	exempted from application.in accordance
However, in the case of $A.C.$ motors having rated	However, in the case of A.C. motors having rated	with 9.3.3, IEC60034-
outputs exceeding 315 kW or rated voltages	outputs exceeding 315 kW or rated voltages	1:2017.
exceeding 1 $kV$ , the load and time of overcurrent	exceeding $1  kV$ , the load and time of overcurrent	

Amended-Original Requirements Comparison Table (1	Requirements for Electrical Installations of Dynamic Po-	sitioning Systems)
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	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 <i>IEC</i> 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.	Rotating machines are to be tested in the following (1) to (13) in accordance with <b>Table 8.2.5</b> . In addition, all tests are to be carried out in accordance with <i>IEC</i> 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 (R	· · · · · · · · · · · · · · · · · · ·	
Amended	Original	Remarks
<ul> <li>((1) to (5) are omitted.)</li> <li>(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</li> </ul>	((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 <i>IEC</i> 60034-1:2017).	Consistent with 4.6, UR E13(Rev.3)
circuit (generators). ((7) to (13) are omitted.)	((7) to (13) are omitted.)	
The effective date of the amendment is according	g to EFFECTIVE DATE AND APPLICATION (B)	
AEFFECTIVE DATE AN	ND APPLICATION (A)	
<ol> <li>The effective date of the amendments is 1 January 2026.</li> <li>Notwithstanding the amendments, the current requirements apply to ships for which the date of contract for construction is before the effective date.</li> </ol>		
AEFFECTIVE DATE AT	ND APPLICATION (B)	
<ol> <li>The effective date of the amendments is 1 January 2020</li> <li>Notwithstanding the amendments, the current requirem to the Society before the effective date.</li> </ol>	6. ents apply to the surveys for which the application is submitted	