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**Economic Commission for Europe****Inland Transport Committee****Working Party on Inland Water Transport****Working Party on the Standardization of Technical  
and Safety Requirements in Inland Navigation****Fifty-ninth session**

Geneva, 23–25 June 2021

Item 4 (b) of the provisional agenda

**Standardization of technical and safety requirements in inland navigation:  
Recommendations on Harmonized Europe-Wide Technical Requirements  
for Inland Navigation Vessels (resolution No. 61, revision 2)****Proposals to amend the new draft chapter, “Special  
provisions applicable to electric vessel propulsion”, of the  
annex to resolution No. 61****Note by the Secretariat****I. Mandate**

1. This document is submitted in line with the Proposed Programme Budget for 2021, part V, Regional cooperation for development, section 20, Economic Development in Europe. Programme 17, Economic Development in Europe (A/75/6 (Sect. 20) para. 20.51).
2. At its sixty-fourth session, the Working Party on Inland Water Transport took note of the amendments to the new draft Chapter XX, “Special provisions applicable to electric vessel propulsion”, based on Chapter 11, “Special provisions applicable to electric propulsion”, of the European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN), edition 2019, as submitted by the Danube Commission in document ECE/TRANS/SC.3/2020/7 (ECE/TRANS/SC.3/213, para. 49).
3. The present document contains proposals on further amendments to draft Chapter XX submitted by the Russian Federation on the basis of document ECE/TRANS/SC.3/2020/7.

**II. Proposals by the Russian Federation to amend the new draft  
chapter, “Special provisions applicable to electric vessel  
propulsion”, of the annex to resolution No. 61**

4. XX-0 Definitions

*Replace the definitions in paragraphs 1–4 with the following definitions:*



1. “Propulsion installation”: the actuating part of a vessel’s power installation in which the fuel energy used by the main engines is converted into thrust, imparting movement to the vessel’s hull. In general, it consists of main engines, gears, shafting and thrusters.
2. “Electric vessel propulsion system”: a set of equipment for the distribution and conversion of electrical energy into mechanical energy for the purpose of reproducing a given thrust by a single propulsion unit.
3. “Main engines”: engines designed to actuate thrusters and/or equipment that serves the main purpose of the ship.
4. “Auxiliary engines”: engines to drive generators that supply electrical power to the vessel and cargo and fire pumps.
5. Paragraph XX-1.1., *amend to read:*

~~A craft’s~~ **The electric main propulsion system of floating equipment** must consist of at least:

- (a) two electrical power sources, irrespective of the number of main propulsion units,
- (b) a switchgear,
- (c) an electric propulsion motor,
- (d) ~~steering positions~~ **a control system** and
- (e) depending on the design of the ~~main~~ electrical propulsion system – the corresponding power electronics (**power transformers and semiconductor frequency converters**).

6. Paragraph XX-1.2., *amend to read:*

If an electric ~~main~~ propulsion system is equipped with only one propulsion motor and if the ~~craft~~ **floating equipment** has no additional vessel propulsion system that ensures sufficient ~~propulsion~~ **power to the propeller shaft**, the electric ~~main~~ propulsion system must be designed in such a way that the ~~craft~~ **floating equipment** is still capable of making steerageway under its own power while retaining the required manoeuvrability in the following cases:

- (a) failure in the power electronics or
- (b) failure in the system of ~~regulation and~~ control of the propulsion installation.

7. Paragraph XX-1.4, *replace* batteries or accumulators *with* accumulator batteries.

8. Paragraph XX-1.7, *amend to read:*

Two electric vessel propulsion systems can only be deemed independent if the power supply circuits of the ~~electric propulsion motor~~ **electric propulsion motors** are completely ~~separate from~~ **independent of** one another or if an FMEA-S<sup>1</sup> safety study demonstrates that no failure of one electric propulsion system impairs the operation of the other.

9. Paragraph XX-2.2

(a) First paragraph, *replace* electric propulsion systems *with* electric propulsion installations;

(b) Second paragraph: *delete* main.

10. Paragraph XX-2.3, *delete* generators.

11. Paragraph XX-2.4, *replace* electric main propulsion *with* electric vessel propulsion.

12. Paragraph XX-3.4, *amend to read:*

The ~~main~~ propulsion systems’ propulsion engines, ~~both electric and~~ with external cooling, must be dimensioned such that, should the external cooling fail, they are still

<sup>1</sup> Failure modes and effects analysis.

capable of operating on reduced power so that the ~~craft~~ **floating equipment** is at least capable of making steerageway under its own power.

13. Paragraph XX-4.3, *delete* in the case of main electric propulsion.
14. Paragraph XX-5.1, *amend to read*:  
The operating state of the electric vessel propulsion and its principal components is to be displayed in the wheelhouse and in **local control station** of the propulsion installation.
15. Paragraph XX-5.2, *amend to read*:  
If the control system in the wheelhouse **control station** fails, the monitoring and operation of the electric ~~main~~ propulsion must be possible from a local control station. The crew must be able to switch ~~within a reasonably short time~~ **control of the installation from one control station to another within a reasonable period of time** without having to make changes to the propulsion installation and propeller speed and direction. ~~A voice communication system for~~ **Means of** voice communication with the local control station must be provided to the wheelhouse.
16. Paragraph XX-6.1, *replace* each station *with* each control station.
17. Paragraph XX-7.3, *amend to read*:  
If a ~~measured or reference value is lost~~ **electricity parameters change** or in the event of a power supply failure of the control ~~or~~ **and** regulation system in accordance with section XX-6:
  - (a) the propeller speed must not increase to ~~inadmissible levels;~~ **a critical level;**
18. Paragraph XX-7.6, *amend to read*:  
The following additional protective devices must be provided:
  - (a) protection against excessive speed ~~exceeding the maximum speed.~~
19. *Delete* section XX-9, "Electric auxiliary propulsion with power electronics".