
Economic Commission for Europe**Inland Transport Committee****Working Party on the Transport of Dangerous Goods**

English

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Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)**Thirtieth session**

Geneva, 23–27 January 2017

Item 5 (b) of the provisional agenda

Proposals for amendments to the Regulations annexed to ADN: other proposals

Use of the land-based power supply network by vessels carrying dangerous goods – Requirements governing the connection and connecting cable between ship and shore**Transmitted by the Central Commission for the Navigation of the Rhine****Introduction**

1. The Central Commission for the Navigation of the Rhine is currently examining the regulatory preconditions for mandatory connection at holding areas equipped with land-based power connections.

Background

2. Vessels are required to comply with the technical requirements of the Rhine Vessel Inspection Regulations (RVIR) and in particular article 9.08 concerning the connection with the shore or other external networks. Article 9.08 (1) says that “Incoming supply lines from land-based networks or other external networks to the installations of the onboard network [shall] have a permanent connection on board in the form of fixed terminals or fixed plug sockets. Cables and their connections shall not be subjected to any pulling load.”

3. Vessels carrying dangerous goods shall comply with the requirements of the regulations annexed to the ADN Agreement. These regulations envisage a number of provisions governing the use of electrical cables. In summary, under the ADN, the use of electrical cables in the cargo zone or protected area is prohibited with exceptions.

4. These regulatory provisions (ADN, RVIR) can pose additional practical problems when connecting to the land-based power network.

a) The cable connection from the ship to the quay is a critical point. The risk of imposing a tensile load on the cable during connection is to be avoided. Moreover, in the case of vessels carrying dangerous goods, the cable connection must not be located in the cargo zone or protected area.

b) If the shore connections are not adjacent to the shipboard connections, a cable is to be run the length of the vessel. This cable can either be on the quay or the ship's deck. Under current ADN provisions, the cable must be laid on the quay and come aboard the vessel either at its bow or stern (outside the cargo zone).

5. One way of mitigating these practical difficulties would be to add one more exception to the list defined in paragraphs 7.X.3.51.2 and 9.3.X.56.3 of the ADN.

6. The conditions governing the exception should prevent the greatest risk, namely spark formation at the point of connection when connecting/removing the cable. To reduce the risks, the connecting cable should be connected to the vessel's electrical power system outside the cargo zone or protected area. The following amendment could be discussed by the ADN safety committee experts and be incorporated into the ADN:

„7.X.3.51.2 The use of movable electric cables is prohibited in the protected area. This provision does not apply to:

- *intrinsically safe electric circuits;*
- *electric cables for connecting signal lights or gangway lighting, provided the socket is permanently fitted to the vessel close to the signal mast or gangway;*
- *electric cables for connecting submerged pumps on board oil separator vessels;*
- *electric cables for connecting the vessel's power network to a land-based power network if the vessel's power network connection is located outside the cargo zone.*

9.3.X.56.3 Movable cables are prohibited in the cargo area, except

- *for intrinsically safe electric circuits*
- *for the supply of signal lights and gangway lighting*
- *for connecting the vessel's power network to a land-based power network.*

7. This proposal was discussed informally with a number of experts. This generated the following points for discussion:

a) The current strength on the connecting cable between the vessel's power network and the land-based power network is greater than on the cable for connecting the signal lights. The risks are thus not identical.

b) If the connection to the land-based power network is defined in a binding manner, this will in future require more frequent handling of the connecting cable between the vessel's power network and the land-based power network. In the process, the cable could be laid over edges and damaged.

c) The cable is to be stored such that it does not impede loading and unloading and is not damaged during these activities.

d) The cable first needs to be connected with the land-based power connection and the on-board power connection. Power can then be applied to it.

e) It would be desirable for the same regulations to apply to all vessels (i.e. irrespective of whether they are carrying dangerous goods or not) failing which applying the regulations would become more complex, potentially giving rise to misunderstandings.

8. Concerning the timetable, it should be noted that the new edition of the ADN will be published on 1st January 2019.

This timetable would be consistent with the adoption in December 2017 of a CCNR resolution amending the RPR. This resolution could come into force on 1st December 2018.

Proposal

9. The safety committee could verify whether the amendments to the ADN on the use of the land-based power network by vessels subject to the ADN are adequate or whether additional regulations are required.
