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Inland Transport Committee

Working Party on the Transport of Dangerous Goods

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)

Twenty-seventh session

Geneva, 24–28 August 2015

Item 4 (b) of the provisional agenda

**Proposals for amendments to the Regulations annexed to ADN:
Other proposals**

Provisions of ADN on different substances – Requirements for electrical equipment

Transmitted jointly by the European Barge Union (EBU), the European River Sea Transport Union (ERSTU) and the European Skippers Organization (ESO)¹

Preliminary remarks

1. Requests broadly similar to this were first transmitted to the ADN Safety Committee at its twenty-fourth session and then more recently at its twenty-sixth session.
2. The document considered at the twenty-sixth session was distributed as INF.26 only shortly before the session and it had only been possible to explain many aspects of the rationale at a meeting of the informal working group on explosion protection held in Berlin a few days earlier, on 14 and 15 January 2015.
3. The inland navigation associations are aware that the proposal now being resubmitted reflects only a small part of the work done by the informal working group on

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explosion protection, but the objective is to have it approved straight away, without having to wait for the full outcome of the group's work to come into force.

4. Given the urgency, the inland navigation associations are requesting approval for this approach and the adoption of the proposal below.

Introduction

5. At the twenty-fourth session of the ADN Safety Committee in January 2015, EBU asked for some requirements to be set out for the equipment of tank vessels in connection with the vessel substance list. A decisive factor was whether the vessel substance list included substances for which protection against explosion is required in column (17) of Table C. There were two parts to the EBU request.

6. The first part addressed flame arresters for sampling openings, release devices and on the ventilation openings of cofferdams. That part of the request was approved by the Safety Committee at its twenty-fourth session. The amendments are included in ADN 2015.

7. The second part of the request concerned requirements applicable to electrical equipment. After a brief consideration of the request during the twenty-fourth session of the Safety Committee, EBU withdrew it, as the proposal was not sufficiently substantiated.

8. During the twenty-fifth session of the Safety Committee, the basis was laid for continuation of the work of the informal working group on explosion protection. Paragraphs 54 and 56 of the report of the twenty-fifth session (ECE/TRANS/WP.15/AC.2/52) contain decisions concerning minimum requirements (e.g. temperature class, explosion group) and additional requirements depending on the substances authorized for transport on the given tank vessel.

9. The informal working group on explosion protection took some further decisions on that basis. There is no report of that meeting. Based on the updated working documents, the inland navigation representatives have come to the following conclusions:

- “If the permitted substance list for a vessel includes substances for which column (17) of Table C includes a requirement for explosion protection, the electrical equipment must be of the “certified safe” type (comparable to zone 1).
- If the permitted substance list for a vessel includes only substances for which column (17) of Table C does not include a requirement for explosion protection, the electrical equipment must be of the “limited explosion risk” type (comparable to zone 2) and a maximum surface temperature of 200 °C may not be exceeded.”

10. They therefore submit the following proposed addition to the text:

Current text

11. The existing text 9.3.x.52.1 reads as follows:

“9.3.x.52 *Type and location of electrical equipment*

9.3.x.52.1 [Permitted equipment]

(a) Only the following equipment may be installed in cargo tanks, [residual cargo tanks]² and piping for loading and unloading (comparable to zone 0):

² The section in parentheses concerns 9.3.2.52.1 and 9.3.3.52.1 but not 9.3.1.52.1.

- measuring, regulation and alarm devices of the EEx (ia) type of protection.
- (b) Only the following equipment may be installed in the cofferdams, double-hull spaces, double bottoms and hold spaces (comparable to zone 1):
 - measuring, regulation and alarm devices of the certified safe type;
 - lighting appliances of the “flame-proof enclosure” or “apparatus protected by pressurization” type of protection;
 - hermetically sealed echo sounding devices the cables of which are led through thick-walled steel tubes with gastight connections up to the main deck;
 - cables for the active cathodic protection of the shell plating in protective steel tubes such as those provided for echo sounding devices.
- (c) Only the following equipment may be installed in the service spaces in the cargo area below deck (comparable to zone 1):
 - measuring, regulation and alarm devices of the certified safe type;
 - lighting appliances of the “flame-proof enclosure” or “apparatus protected by pressurization” type of protection;
 - motors driving essential equipment such as ballast pumps; they shall be of the certified safe type.
- (d) The control and protective equipment of the electrical equipment referred to in (a), (b) and (c) above shall be located outside the cargo area if they are not intrinsically safe.
- (e) The electrical equipment in the cargo area on deck (comparable to zone 1) shall be of the certified safe type.”

Addition

12. The following text is included at the end of 9.3.x.52.1, after (e):

“If the vessel substance list within the meaning of 1.16.1.2.5 contains only substances for which anti-explosion protection is not required under column (17) of Table C of Chapter 3, the electrical equipment situated in the areas referred to in subparagraphs (a), (b), (c), (d) and (e) must be of the “limited explosion risk” type (comparable to zone 2) and a maximum surface temperature of 200 °C may not be exceeded.”

Justification

13. This addition is necessary to ensure legal certainty for the electrical equipment in the cargo area of vessels for which the list of substances carried within the meaning of 1.16.1.2.5 includes only substances for which anti-explosion protection is not required under column (17) of Table C of Chapter 3. It would be more likely to look for these requirements in columns (15) and (16) of Table C, but those columns do not include any reference for substances for which explosion protection is not necessary within the meaning of column (17). The current wording of ADN does not include any clarification of the required configuration for electrical installations.

14. The proposed addition conforms fully to the decisions of the Safety Committee and the statements of the informal working group on explosion protection, which is mentioned above for reasons of clarity. The addition is a further step forward in expressing requirements taking account of the substances carried.
