ANNEX 2

RESOLUTION MEPC.62(35)
adopted 11 March 1994

AMENDMENTS TO THE STANDARDS FOR PROCEDURES AND ARRANGEMENTS FOR THE DISCHARGE OF NOXIOUS LIQUID SUBSTANCES

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(c) of the Convention on the International Maritime Organization concerning the function of the Marine Environment Protection Committee,

RECALLING ALSO resolution MEPC.18(22) by which the Committee adopted the Standards for Procedures and Arrangements for the Discharge of Noxious Liquid Substances, referred to in regulation 5 of Annex II of MARPOL 73/78,

HAVING CONSIDERED the recommendation by the Sub-Committee on Bulk Chemicals at its twenty-second session,

1. ADOPTS the amendments to the Standards for Procedures and Arrangements for the Discharge of Noxious Liquid Substances, the text of which is set out in the Annex to the present resolution;

2. DECIDES that the amendments to sections 1 and 4 of the Standards shall apply from 1 July 1994; and

3. DECIDES FURTHER that the provisions of new Appendix B shall apply to ships built on or after 1 July 1994 and that they could be applied to ships built before 1 July 1994, with the approval of the Administration.

ANNEX

Paragraph

1.7.8 Add a paragraph as follows:

"1.7.8 Fire hazards

The fire hazards associated with the use of cleaning media other than water should be carefully considered."

1.8.1 and 1.8.2 Amend 1.8.1 and 1.8.2 to read as follows:

"1.8.1 When a washing medium other than water, such as mineral oil or chlorinated solvent, is used instead of water to wash a tank, then its discharge is governed by the provisions of Annex I or Annex II, which would apply respectively if such a medium had been carried as cargo. Tank washing procedures involving the use of such medium should be set out in the Procedures and Arrangements Manual and be approved by the Administration.

1.8.2 When small amounts of detergents are added to water in order to facilitate tank washing, no detergents containing pollution category A components should be used except those components that are readily biodegradable and present in a total concentration of less than 10%. No restrictions additional to those applicable to the tank due to the previous cargo should apply."

4.2 Insert after 4.1 a new paragraph 4.2 as follows:

"4.2 Pumping and stripping

In unloading a cargo tank containing a category A substance, the tank and its associated piping should be emptied to the maximum extent practicable by maintaining a positive flow of cargo to the tank's suction point and using the stripping procedure set out in the Manual."

Renumber present paragraphs 4.2 and 4.3 to 4.3 and 4.4 respectively.

After the existing text of Appendix B - Prewash Procedure, insert the following text:

"REVISED APPENDIX B - PREWASH PROCEDURE FOR NEW SHIPS

In several sections of the Standards a prewash procedure is required in order to meet certain Annex II requirements. This appendix explains how these prewash procedures should be performed and how the minimum volumes of washing media to be used should be determined. Smaller volumes of washing media may be used based on actual verification testing to the satisfaction of the Administration. Where reduced volumes are approved an entry to that effect must be recorded in the Procedures and Arrangements Manual.

The applicable safety considerations listed in section 1.7 of the Standards should be taken into account when developing procedures employing recycling of wash water, or when washing is conducted with a medium other than water.

If a medium other than water is used for the prewash, the provisions of 1.8.1 of the Standards apply.

Prewash procedures for non-solidifying substances without recycling

1. Tanks should be washed by means of a rotary jet(s), operated at sufficiently high water pressure. In the case of category A substances washing machines should be operated in such locations that all tank surfaces are washed. In the case of category B and C substances only one location need be used.

2. During washing the amount of liquid in the tank should be minimized by continuously pumping out slops and promoting flow to the suction point. If this condition cannot be met, the washing procedure should be repeated three times, with thorough stripping of the tank between washings.

3. Those substances which have a viscosity equal to or greater than 25 mPa.s at 20°C should be washed with hot water (temperature at least 60°C), unless the properties of such substances make the washing less effective.

4. The quantities of wash water used should not be less than those specified in paragraph 20 or determined according to paragraph 21.

5. After prewashing the tanks and lines should be thoroughly stripped.

Prewash procedures for solidifying substances without recycling

6. Tanks should be washed as soon as possible after unloading. If possible, tanks should be heated prior to washing.

7. Residues in hatches and manholes should preferably be removed prior to the prewash.

8. Tanks should be washed by means of a rotary jet(s) operated at sufficiently high water pressure and in locations to ensure that all tank surfaces are washed.

9. During washing the amount of liquid in the tank should be minimized by pumping out slops continuously and promoting flow to the suction point. If this condition cannot be met, the washing procedure should be repeated three times with thorough stripping of the tank between washings.

10. Tanks should be washed with hot water (temperature at least 60°C), unless the properties of such substances make the washing less effective.

11. The quantities of wash water used should not be less than those specified in paragraph 20 or determined according to paragraph 21.

12. After prewashing the tanks and lines should be thoroughly stripped.

Prewash procedures with recycling of washing medium

13. Washing with a recycled washing medium may be adopted for the purpose of washing more than one cargo tank. In determining the quantity, due regard must be given to the expected amount of residues in the tanks and the properties of the washing medium and whether any initial rinse or flushing is employed. Unless sufficient data are provided, the calculated end concentration of cargo residues in the washing medium should not exceed 5% based on nominal stripping quantities.

14. The recycled washing medium should only be used for washing tanks having contained the same or similar substance.

15. A quantity of washing medium sufficient to allow continuous washing should be added to the tank or tanks to be washed.

16. All tank surfaces should be washed by means of a rotary jet(s) operated at sufficiently high pressure. The recycling of the washing medium may either be within the tank to be washed or via another tank, e.g. a slop tank.

17. The washing should be continued until the accumulated throughput is not less than that corresponding to the relevant quantities given in paragraph 20 or determined according to paragraph 21.

18. Solidifying substances and substances with viscosity equal to or greater than 25 mPa.s at 20°C, should be washed with hot water (temperature at least 60°C) when water is used as the washing medium, unless the properties of such substances make the washing less effective.

19. After completing the tank washing with recycling to the extent specified in paragraph 17, the washing medium should be discharged and the tank thoroughly stripped. Thereafter, the tank should be subjected to a rinse, using clean washing medium, with continuous drainage and discharge. The rinse should as a minimum cover the tank bottom and be sufficient to flush the pipelines, pump and filter.

<u>Minimum quantity of water to be used in a prewash</u>

20. The minimum quantity of water to be used in a prewash is determined by the residual quantity of noxious liquid substance in the tank, the tank size, the cargo properties, the permitted concentration in any subsequent wash water effluent, and the area of operation. The minimum quantity is given by the following formula:

$$Q = k(15r^{0.8} + 5r^{0.7}.V/1000)$$

where

Q = the required minimum quantity in m^3

r = the residual quantity per tank in m^3. The value of "r" shall be the value demonstrated in the actual stripping efficiency test, but should not be taken lower than 0.100 m^3 for a tank volume of 500 m^3 and above and 0.040 m^3 for a tank volume of 100 m^3 and below. For tank sizes between 100 m^3 and 500 m^3 the minimum value of "r" allowed to be used in the calculations is obtained by linear interpolation.

For category A substances the value of "r" should either be determined based on stripping tests according to the Standards, observing the lower limits as given above, or be taken to be 0.9 m^3.

V = tank volume, m^3

k = a factor having values as follows:

Category A, non-solidifying, low viscosity substances, outside special areas	k = 1.0
Category A, non-solidifying, low viscosity substance, inside special areas	k = 1.2
Category A, solidifying or high viscosity substance, outside special areas	k = 2.0
Category A, solidifying or high viscosity substance, inside special areas	k = 2.4
Phosphorous in all areas	k = 3.0
Category B and C, non-solidifying, low viscosity substance	k = 0.5
Category B and C, solidifying or high viscosity substance	k = 1.0

The table below is calculated using the formula with a "k" factor of 1 and may be used as an easy reference.

Stripping quantity m^3	Tank volume m^3		
	100	500	3000
$\leq$ 0.04	1.2	2.9	5.4
0.10	2.5	2.9	5.4
0.30	5.9	6.8	12.2
0.90	14.3	16.1	27.7

21. Verification testing for approval of prewash volumes lower than those given in paragraph 20 may be carried out to the satisfaction of the Administration to prove that the requirements of regulation 5 are met, taking into account the substances the tanker is certified to carry.

The prewash volume so verified should be adjusted for other prewash conditions by application of the factor "k" as defined in paragraph 20."

Appendix D

4.4.9 Amend to read as follows:

"4.4.9 This section should contain information on the use and disposal of cleaning agents (e.g. solvents used for tank cleaning) and additives to tank washing water (e.g. detergents)."

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