Subject

Bulk Carrier Safety : Water Ingress Detection and Alarm System

ClassNK

Technical Information

No. TEC-0537
Date 3 July 2003

To whom it may concern

As previously informed by ClassNK Technical Information No. TEC-0498, 0507 and 0532 it has been discussed at IMO/IACS to improve Bulk Carrier Safety up graded requirements.

At the seventy-seventh session of Maritime Safety Committee (MSC 77), Performance Standards for Water Level Detection and Alarm System on Bulk Carriers, which should be installed by first periodical survey (Annual, Intermediate or Special Survey) after 1 July 2004 as specified in Regulation 12 of SOLAS Chapter XII, was adopted. The Performance Standard had been drafted to be applicable to water level detection and alarm systems installed to ships after MSC 77, but this application date was eliminated.

ClassNK is going to develop RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIP to incorporate the Performance Standard. In the meantime, ClassNK examines the water level detection and alarm system on bulk carriers installed to ships classed by ClassNK before amendment of the above Rule, on the basis of the requirements specified in Regulation 12 of SOLAS Chapter XII.

ClassNK has instructed its surveyors to proceed surveys for water level detection and alarm system on bulk carriers when they are installed, in accordance with the attached survey procedures. Accordingly, please submit a survey application to ClassNK exclusive service site for a confirmatory survey of the system.

Water level detection and alarm system on bulk carriers, which will be installed to ships classed by ClassNK after the Performance Standards are incorporated to RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIP, may be required to be of a type approved by ClassNK. Regarding Type Approval of the equipment, please contact ClassNK Machinery Department.

(To be continued)

For any questions about the above, please contact:

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On Approval for Water Level Detection and Alarm System	Machinery Department Tel.: +81-3-5226-2022 Fax: +81-3-5226-2024 E-mail: mcd@classnk.or.jp

Attach.:

1. Survey Procedures for Installation of water level detection and alarm system for cargo holds, forward spaces & ballast tanks
2. Water Level Detection and Alarm System Check List
3. Regulation 12 of SOLAS Chapter XII

Attachment 1. to
ClassNK Technical Information No. TEC-0537

Survey Procedures for Installation of water level detection and alarm system for cargo holds, forward spaces & ballast tanks

1. Application
   (1) Scope
   Bulk Carriers defined in ClassNK Rule Part B (bulk carriers and ore carriers with a notation of ESP) of which keel were laid before 1 July 2004. Ships during construction, of which keel were/will be laid before 1 July 2004 are included.
   (2) Implementation
   First periodical survey (Annual, Intermediate or Special Survey) after 1 July 2004.

2. Specific requirements
   Water level detection and alarm system is to be located on the navigation bridge and be capable of detecting water ingress at all cargo holds and spaces and ballast tank forward of collision bulk head. In general, FPT, Bosn's Store, F'cle Space excluding chain lockers are considered as these spaces.

3. Survey
   Plan examination at Head Office is not required.
   Surveyors are to examine water level detection and alarm systems in line with the attached check list.

Attachment 2. to
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Water Level Detection and Alarm System Check List

Cargo Holds

- ☐ In each cargo hold, the systems are to give alarms when the water level reaches the following (a) and (b) at the aft end of the cargo hold.
  (a) a height of 0.5m above the inner bottom.
  (b) a height not less than 15% of the depth of the cargo hold but not more than 2.0m.
- ☐ Detectors, electrical cables and any associated equipment installed in cargo holds are to be protected from damage by cargoes or cargo handling equipment.
- ☐ Water levels are to be detected at as close to the center line (within B/6m from center line), or at both the port and starboard sides of the cargo hold. B:Breadth of Ship
- ☐ Bilge alarms and water ingress detectors had already been provided in accordance with SOLAS Regulation 9 Chapter XII. In this case, the above water level detection system are not required.

Other Spaces

- ☐ In any ballast tank forward of the collision bulk head, the system is to give an alarm when the liquid in the tank reaches a level not exceeding 10% of the tank capacity.
- ☐ In any dry or void space other than chain locker, any part of which extends forward of the foremost cargo hold and the volume of which exceeds 0.1% of the ship's maximum displacement volume, the system is to give an alarm at a water level of 0.1m above the deck.

General

- ☐ The installation of the system is not to inhibit the use of any other sounding devices such as sounding pipe or other water level gauging device.
- ☐ The installation of the system is not to inhibit the water-tightness nor strength of hull structure.
- ☐ In case electric cables are not protected by steel pipes, cable penetration of bulkheads and deck is made by means of cable gland or boxes.
- ☐ Visible and audible alarms given by the water level detection and alarm systems are to be capable of identifying at the navigation bridge.
- ☐ The systems are to be installed at the location where they are accessible for survey, maintenance and repair. Any filtration arrangement, if fitted to the detectors, are to be capable of being cleaned before loading.
- ☐ Electric facilities in way of cargo holds are to be of certified intrinsically safe type. In case the ship does not carry flammable cargoes, intrinsically safe type is not required.
- ☐ Electric cables for water ingress alarm of intrinsically safe circuits are to be installed separately from cables for general circuits.
- ☐ Override system for ballast tanks forward of the collision bulkhead and water ballast holds: The alarm for each tank/hold is to be capable of stopping, and an override visual indication is to be given to the navigation bridge throughout deactivation of the water level detectors for the tanks/holds.
- ☐ Electric cables on weather decks are adequately protected from mechanical damages.
- ☐ Performance Test

Attachment 3. to
ClassNK Technical Information No. TEC-0537

Regulation 12 of SOLAS Chapter XII

Regulation 12

Hold, ballast and dry space water level detectors
(This regulation applies to bulk carriers regardless of their date of construction)

1. Bulk carriers shall be fitted with water level detectors:

   (1) in each cargo hold, giving audible and visual alarms, one when the water level above the inner bottom in any hold reaches a height of 0.5 m and another at a height not less than 15% of the depth of the cargo hold but not more than 2.0 m. On bulk carriers to which regulation 9.2 applies, detectors with only the latter alarm need be installed. The water level detectors shall be fitted in the aft end of the cargo holds. For cargo holds which are used for water ballast, an alarm overriding device may be installed. The visual alarms shall clearly discriminate between the two different water levels detected in each hold;

   (2) in any ballast tank forward of the collision bulkhead required by regulation II-1/11, giving an audible and visual alarm when the liquid in the tank reaches a level not exceeding 10% of the tank capacity. An alarm overriding device may be installed to be activated when the tank is in use; and

   (3) in any dry or void space other than a chain cable locker, any part of which extends forward of the foremost cargo hold, giving an audible and visual alarm at a water level of 0.1 m above the deck. Such alarms need not be provided in enclosed spaces the volume of which does not exceed 0.1% of the ship's maximum displacement volume.

2. The audible and visual alarms specified in paragraph 1 shall be located on the navigation bridge.

3. Bulk carriers constructed before 1 July 2004 shall comply with the requirements of this regulation not later than the date of the annual, intermediate or renewal survey of the ship to be carried out after 1 July 2004, whichever comes first.