

Cargo Sampling Systems for the Ships Carrying Liquefied Gases in Bulk

Amended Guidance

Guidance for the Survey and Construction of Steel Ships Part N

Reason for Amendment

Requirements related to cargo sampling systems for ships carrying liquefied gases in bulk are specified in the IMO's International Code of the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) amended by Resolution MSC.370(93) in May 2014. These requirements have already been incorporated into the Part N of the NK Rules and they apply to ships subject to the IGC Code whose keels are laid or which are at a similar state of construction on or after 1 July 2016.

The NK requirements for cargo sampling systems as well as the NK requirements for gas sampling points related to the adequate monitoring of the progress of atmosphere changes, however, were subsequently pointed out as being unclear. In response, the Society decided to review the layout of these requirements to determine whether further clarification was needed.

Accordingly, all relevant requirements were amended based on the Society's review.

Outline of Amendment

Modified the layout of Part N of the Guidance so that the requirements for cargo sampling points and the requirements gas sampling points related to the adequate monitoring of the progress of atmosphere changes contained therein are consistent with the requirements for cargo sampling systems in the Part N of the Rules.

“Guidance for the survey and construction of steel ships” has been partly amended as follows:

Part N SHIPS CARRYING LIQUEFIED GASES IN BULK

N5 PROCESS PRESSURE VESSELS AND LIQUID, VAPOUR, AND PRESSURE PIPING SYSTEMS

N5.6 Cargo Transfer Arrangements

N5.6.5 Cargo Sampling Connections

Sub-paragraph -3 has been added as follows.

1 The requirements of **5.6.5, Part N of the Rules** are only applicable in cases where a sampling system is fitted on board. Connections used for controlling the atmosphere in cargo tanks during inerting or gassing up, however, are not considered to be cargo sampling connections.

2 For the purpose of **5.6.5, Part N of the Rules**, two valves on the sample inlet are, in general, to be located at least 500 *mm* apart from each other, except where a smaller distance is permitted by the Society.

3 In cases where gas sampling systems are connected to cargo transfer lines and where two valves are provided in accordance with **5.6.5, Part N of the Rules**, the relief valves specified in **5.5.6, Part N of the Rules** are to be provided. However, in the cases where measures are taken to prevent the retention of cargo liquid between such valves and where the following is complied with, the fitting of relief valves may be omitted.

(1) Caution plates that show the procedures for gas sampling including how to operate both valves are to be provided at the operation position for gas sampling.

(2) Confirmation whether both valves are open or closed are to be taken at the operation position for gas sampling.

N9 CARGO CONTAINMENT SYSTEM ATMOSPHERE CONTROL

N9.1 Atmosphere Control within Cargo Containment Systems

Paragraph N9.1.4 has been amended as follows.

N9.1.4 Monitoring of Atmosphere Change

Gas sampling points referred to in **9.1.4, Part N of the Rules** are to be in accordance with the following requirements:

1 The arrangement of gas sampling points in cargo tanks is to be determined according to cargo properties, cargo tank construction and capacity as well as the abilities of gas freeing and purging systems; moreover, in cases where appropriate, the adequacy of the arrangement of gas sampling points is to be verified by performance tests. The locations of gas sampling points are, as standard, to be at the upper, middle and lower spaces of the cargo tank.

~~**2** At least two valves are to be used to isolate a gas sampling point. However, in cases where only gas (not liquid) is sampled at the sampling point, just a single valve may be acceptable.~~

~~**3** In cases where gas sampling systems are connected to cargo transfer lines and where two valves are provided in accordance with ~~2~~ above, the relief valves specified in **5.5.6, Part N of the Rules** are to be provided. However, in the cases where measures are taken to prevent the retention of cargo liquid between such valves and where the following is complied with, the fitting of relief valves may be omitted.~~

~~(1) Caution plates that show the procedures for gas sampling including how to operate both valves are to be provided at the operation position for gas sampling.~~

~~(2) Confirmation whether both valves are open or closed are to be taken at the operation position for gas sampling.~~

42 For ships which **Column f of Table N19.1 of the Rules** is applied according to the type of products to be carried and which are required to install toxic vapour detectors, the gas sampling system is to be of a closed-loop design to prevent cargo vapour from venting to the atmosphere.

53 The closed-loop designed gas sampling systems specified in ~~42~~ above is to be provided with two valves respectively on both the sample inlet side and return side.