

# GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

## Part N

## **Ships Carrying Liquefied Gases in Bulk**

Guidance for the Survey and Construction of Steel Ships

Part N

2013 AMENDMENT NO.1

Notice No.69      27th December 2013

Resolved by Technical Committee on 29th July 2013

**ClassNK**  
NIPPON KAIJI KYOKAI

AMENDMENT TO THE GUIDANCE FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

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

**Part N SHIPS CARRYING LIQUEFIED GASES IN BULK**

**Annex 1 GUIDANCE FOR EQUIPMENT AND FITTINGS OF SHIPS CARRYING LIQUEFIED GASES IN BULK**

**Chapter 5 VALVES**

**5.1 General**

Paragraph 5.1.1 has been amended as follows.

**5.1.1 Application**

The requirements in this Chapter apply to valves directly fitted on cargo tanks or interbarrier spaces and valves for cargo and process piping in accordance with the requirements in **Chapter 5, Part N of the Rules**. Relief valves subject to the requirements in Chapter 6 are exempt from these requirements.

**Chapter 6 RELIEF VALVES**

**6.4 Tests and Inspection**

Paragraph 6.4.1 has been amended as follows.

**6.4.1 Prototype Test**

**1** Relief valves other than those fitted to cargo piping and process piping with a design temperature of  $-55^{\circ}\text{C}$  or above are to be subjected to the prototype tests specified in 8.2.5, Part N of the Rules to verify that they are possess the provided with necessary performance. However, part or the whole of this test for ~~the~~ valves having sufficient service records and approved by the Society may be omitted.

**2** The prototype test is to be conducted in accordance with the test plan approved by the Society. In the test plan, details of procedures to verify the following items (1) through (9) are to be specified depending on the type of relief valves:

- (1) Strength of relief valve casing (including the verification of strength at the design temperature. A hydraulic test is to be conducted at a test pressure of 2 times design pressure. However, relief valves other than those fitted directly on type C independent tanks and process pressure vessels may be tested at a test pressure of 1.5 times design pressure.)

- (2) Strength of valve ~~body~~ discs and valve seats (including ~~the~~ verification of ~~on~~ strength at the design temperature)
- (3) Rate of leakage of vapour through the valve seat (including verification at the design temperature)
- (4) Relieving capacity and coefficient of discharge (value of K) (as per the requirements in 6.4.2)
- (5) Operation at the design temperature and at the set pressure (to be operated, at least, ~~for~~ 20 times)
- (6) Static strength and fatigue strength of membrane and bellows (including ~~the~~ verification of strength at the design temperature)
- (7) Compatibility of structural materials with the cargo vapour and characteristics of aging deterioration under the intended atmosphere (particularly, those non-metallic materials exposed to cargo vapour)
- (8) Operating test under fire (however, this is applicable only to cases where non-metal bellows or membranes are used)
- (9) Others as deemed necessary by the Society depending on the type of relief valves

3 For the relief valves with non-metallic membranes, the renewal intervals of non-metallic membranes may be prolonged exceeding 3 years to those approved by the Society considering results of the tests specified in -2(6), (7) and (9) above.

### 6.4.3 Tests at Manufacturing Plants

Sub-paragraph -1(1) has been amended as follows.

1 Individual relief valves are to be subjected to the following tests (1) to (3) after manufacture:

- (1) Pressure test of pressure bearing parts:  
~~Pressure~~ A hydraulic test is to be conducted at a pressure 2 times or more times of the design pressure. However, those fitted to cargo piping and process piping relief valves other than those fitted directly onto type C independent tanks and process pressure vessels may be tested at 1.5 times the design pressure.
- (2) Airtightness test of valve seats:  
 Airtightness test is to be conducted at a pressure in the proximity of the set pressure of the relief valve (at least 90% of the set pressure).
- (3) Performance test:  
 The relieving pressure, blowdown pressure, valve lift and other operating conditions are to be verified.

## EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 January 2014.
2. Notwithstanding the amendments to the Guidance, the current requirements may apply to valves for which the application for testing is dated before the effective date and which are installed on ships for which the date of contract for construction\* is before the effective date.  
\* “contract for construction” is defined in the latest version of IACS Procedural Requirement (PR) No.29.

### IACS PR No.29 (Rev.0, July 2009)

1. The date of “contract for construction” of a vessel is the date on which the contract to build the vessel is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the vessels included in the contract are to be declared to the classification society by the party applying for the assignment of class to a newbuilding.
2. The date of “contract for construction” of a series of vessels, including specified optional vessels for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder. For the purpose of this Procedural Requirement, vessels built under a single contract for construction are considered a “series of vessels” if they are built to the same approved plans for classification purposes. However, vessels within a series may have design alterations from the original design provided:
  - (1) such alterations do not affect matters related to classification, or
  - (2) If the alterations are subject to classification requirements, these alterations are to comply with the classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the classification requirements in effect on the date on which the alterations are submitted to the Society for approval.The optional vessels will be considered part of the same series of vessels if the option is exercised not later than 1 year after the contract to build the series was signed.
3. If a contract for construction is later amended to include additional vessels or additional options, the date of “contract for construction” for such vessels is the date on which the amendment to the contract, is signed between the prospective owner and the shipbuilder. The amendment to the contract is to be considered as a “new contract” to which **1.** and **2.** above apply.
4. If a contract for construction is amended to change the ship type, the date of “contract for construction” of this modified vessel, or vessels, is the date on which revised contract or new contract is signed between the Owner, or Owners, and the shipbuilder.

Note:

This Procedural Requirement applies from 1 July 2009.