
## CCS Rule Change Notice For:

# Rules for Natural Gas Fuelled Ships (2017)

**Version: January 2018. RCN No.1**

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**Beijing**

# CHAPTER 1 GENERAL

## Section 1 GENERAL PROVISIONS

The existing paragraph 1.1.2.17（3）“A Tank connection space is a space surrounding all tank connections and tank valves that is required for tanks with such connections in enclosed spaces”, at its behind adds a paragraph:

A tank connection space may also contain equipment such as vaporizers or heat exchangers. Such equipment is considered to only contain potential sources of release, but not sources of ignition.

The existing paragraph 1.1.2.19 “A Fuel preparation room means any space containing pumps, compressors and/or vaporizers for fuel preparation purposes ”, at its behind adds a paragraph:

A tank connection space which has equipment such as vaporizers or heat exchangers installed inside is not regarded as a fuel preparation room. Such equipment is considered to only contain potential sources of release, but not sources of ignition.

## Section 4 SHIP SURVEYS

In the Rule Change Notice No.1 (issued in November 2017) for Rules for Natural Gas Fuelled Ships (2017) :
the existing paragraph 1.4.3.3(2) ② “A random selection of pressure relief valves for the fuel supply and bunkering piping are to be opened for examination, adjusted, and function tested.”
which is revised as follows:

Pressure relief valves for the fuel supply and bunkering piping are to be opened for examination, adjusted, and function tested.

Note: The requirements of above revised paragraph are to be implemented from 1 January 2019.

# CHAPTER2 SHIP DESIGN AND ARRANGEMENT

## Section 3 LOCATION AND DIVISION OF SPACES

The paragraph 2.3.5.2 is added as follows:

2.3.5.2 For a fuel preparation room located on an open deck, it’s to be arranged according to the

following requirements:

(1) The fuel preparation room shall be arranged to safely contain cryogenic leakages;

(2) The material of the boundaries of the fuel preparation room shall have a design temperature corresponding with the lowest temperature it can be subjected to in a probable maximum leakage scenario unless the boundaries of the space, i.e. bulkheads and decks, are provided with suitable thermal protection;

(3) The fuel preparation room shall be arranged to prevent surrounding hull structure from being exposed to unacceptable cooling, in case of leakage of cryogenic liquids;

(4) The fuel preparation room shall be designed to withstand the maximum pressure build up during such a leakage defined in 2.5.3.2(2). Alternatively, pressure relief venting to a safe location (mast) can be provided.

## CHAPTER 4 FULE CONTAINMENT SYSTEMS

### Section 1 GENERAL PROVISIONS

The paragraph 4.1.3.6 is added as follows:

4.1.3.6 A tank connection space may be required also for tanks on open deck. This may apply for ships where restriction of hazardous areas is safety critical. A tank connection space may also be necessary in order to provide environmental protection for essential safety equipment related to the gas fuel system like tank valves, safety valves and instrumentation.

The paragraph 4.1.3.7 is added as follows:

4.1.3.7 If a tank connection space is fitted for tanks on open deck, tanks need not meet the requirements specified in 4.1.3.5 of the Rules.

The existing paragraph numbers 4.1.3.6 to 4.1.3.17 and referenced paragraph number in the Rules are increased by two in sequence, such as the existing paragraph number 4.1.3.6 to 4.1.3.17 are replaced by number 4.1.3.8 to 4.1.3.19.

### Section 5 PRESSURE RELIEF SYSTEMS

The existing paragraph 4.5.3.1(1) ② "A---external surface area of the tank, in $m^2$, as for different tank types, as shown in Figure 4.5.3.1 (1) ", at its behind adds a paragraph:

For prismatic tanks, the following requirements should be met:

(a) $L_{min}$, for non-tapered tanks, is the smaller of the horizontal dimensions of the flat bottom of the tank. For tapered tanks, as would be used for the forward tank, $L_{min}$ is the smaller of the length and the average width.

(b) For prismatic tanks whose distance between the flat bottom of the tank and bottom of the hold space is equal to or less than $L_{min}/10$:

A = external surface area minus flat bottom surface area.

(c) For prismatic tanks whose distance between the flat bottom of the tank and bottom of the hold space is greater than $L_{min}/10$:

A = external surface area.

### Section 7 MAINTAINING OF FUEL STORAGE CONDITON

The paragraph 4.7.1.3 is added as follows:

4.7.1.3 Holding time required in 4.7.1.1 shall be met including after activation of the safety system required in 12.1.2.1(2). The activation of the safety system alone is not deemed as an emergency situation.

## CHAPTER 5 GAS FUEL BUNKERING

### Section 2 BUNKERING STATIONS

The existing paragraph 5.2.1.1 “Enclosed or semi-enclosed bunkering stations are to be subject to the risk assessment, and the relevant report is to be approved by CCS”, which is revised as follows:

Closed or semi-enclosed bunkering stations shall be subject to special consideration within the risk assessment, and the risk assessment report is to be approved by CCS. The special consideration shall as a minimum include, but not be restricted to the following design features:

(1) segregation towards other areas on the ship

(2) hazardous area plans for the ship

(3) requirements for forced ventilation

(4) requirements for leakage detection (e.g. gas detection and low temperature detection)

(5) safety actions related to leakage detection (e.g. gas detection and low temperature detection)

(6) access to bunkering station from non-hazardous areas through airlocks

(7) monitoring of bunkering station by direct line of sight or by CCTV.

# CHAPTER 6 GAS FUEL SUPPLY

## Section 4 GAS SUPPLY SYSTEMS INSIDE THE MACHINERY SPACE

The existing paragraph 6.4.1.2(2) is revised as follows:

（2）For sea-going ships engaged on domestic voyages, double wall piping may be dispensed with to the engine air intake manifold, provided that gas is injected after the turbocharger to the engine air intake manifold at a low pressure and at least one gas detector is fitted above the engine.

# CHAPTER 7 GAS CONSUMERS

## Section 2 INTERNAL COMBUSTION ENGINES OF PISTON TYPE

The existing paragraph 7.2.1.2 is revised as follows:

7.2.1.2 Premixed engines using fuel gas mixed with air before the turbocharger shall be located in ESD protected machinery spaces.

# CHAPTER 10 MECHANICAL VENTILATION

## Section 3 MACHINERY SPACES

The paragraph 10.3.1.2 is added as follows:

10.3.1.2 Spaces enclosed in the boundaries of machinery spaces (such as purifier's room, engine-room workshops and stores) are considered an integral part of machinery spaces containing gas-fuelled consumers and, therefore, their ventilation system does not need to be independent of the one of machinery spaces.

The existing paragraph numbers 10.3.1.2 to 10.3.1.5 and referenced paragraph number in the Rules are increased in sequence, such as the existing paragraph number 10.3.1.2 to 10.3.1.5 are replaced by number 10.3.1.3 to 10.3.1.6.

## Section 6 DOUBLE PIPES

The paragraph 10.6.1.3 is added as follows:

10.6.1.3 Double piping and gas valve unit spaces in gas safe engine-rooms which are stated in 10.6.1.2 of the Rules are considered an integral part of the fuel supply systems and, therefore, their ventilation system does not need to be independent of other fuel supply ventilation systems provided such fuel supply systems contain only gaseous fuel.

The existing paragraph number 10.6.1.3 is replaced by 10.6.1.4.

The paragraph 10.6.1.5 is added as follows:

10.6.1.5 The ventilation inlet for the double wall piping which is stated in 10.6.1.4 of the Rules shall always be located in a nonhazardous area in open air away from ignition sources.

The existing paragraph numbers 10.6.1.4 to 10.6.1.5 are replaced in sequence by 10.6.1.6 to 10.6.1.7.