
RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS

Part PS Floating Offshore Facilities for Crude Oil/ Petroleum Gas Production, Storage and Offloading

RULES

2016 AMENDMENT NO.1

Rule No.40 30th June 2016

Resolved by Technical Committee on 28th July 2015

Approved by Board of Directors on 14th September 2015

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

Part PS FLOATING OFFSHORE FACILITIES FOR CRUDE OIL/PETROLEUM GAS PRODUCTION, STORAGE AND OFFLOADING

Chapter 7 MACHINERY INSTALLATIONS

7.3 Dual Fuel Boilers and Gas Turbines

Paragraph 7.3.5 has been amended as follows.

7.3.5 Gas Fuel Supply Systems

Gas fuel supply systems, including gas fuel supply lines from production systems, are to comply with Chapter 16, Part N, as applicable. In this case, complete systems for gas processing, (e.g., storage vessels, compressors, separators, filters and pressure control valves) are to be located in hazardous areas and separated from engine and boiler rooms by gas-tight bulkheads.

~~1 Gas fuel piping is not to pass through accommodation spaces, service spaces or control stations. Gas fuel piping may pass through or extend into other spaces provided they fulfill one of the following conditions:~~

~~(1) Gas fuel piping is to be a double wall piping system with the gas fuel contained in the inner pipe. The space between the concentric pipes is to be pressurized with inert gas at a pressure greater than the gas fuel pressure. Suitable alarms are to be provided to indicate a loss of inert gas pressure between the pipes; or~~

~~(2) Gas fuel piping is to be installed within ventilated pipes or ducts. The air space between the gas fuel piping and inner wall of such pipes or ducts are to be equipped with mechanical exhaust ventilation having a capacity of at least 30 air changes per hour. Ventilation systems are to be arranged to maintain pressures less than the atmospheric pressure. Fan motors are to be placed outside ventilated pipes or ducts. Ventilation outlets are to be placed in positions where no flammable gas-air mixture may be ignited. Ventilation is to always be in operation in cases where there is gas fuel in the piping. Continuous gas detection is to be provided to indicate leaks and to shut down gas fuel supplies to machinery spaces in accordance with 16.3.10, Part N. Master gas fuel valves required by 16.3.7, Part N are to automatically close if required air flows are not established and maintained by exhaust ventilation systems.~~

~~2 If a gas leak occurs, the gas fuel supply is not to be restored until the leak has been found and repaired. Instructions to this effect are to be placed in prominent positions in machinery spaces.~~

~~3 The double wall piping systems or the ventilated pipes or ducts provided for gas fuel piping are to terminate at the ventilation hood or casing required by 16.3.4, Part N.~~

~~4 Ventilation hoods or casings are to be provided for areas where flanges, valves, etc. are installed, and for gas fuel piping of gas fuel utilization units such as boilers or gas turbines. If such ventilation hoods or casings are not served by the exhaust ventilation fans serving the ventilated pipes or ducts as specified in 16.3.1(2), Part N, then they are to be equipped with exhaust ventilation systems and continuous gas detection is to be provided to indicate leaks and to shut~~

~~down gas fuel supplies to machinery spaces in accordance with 16.3.10, Part N. Master gas fuel valves required by 16.3.7, Part N are to automatically close if required air flows are not established and maintained by exhaust ventilation systems. Ventilation hoods or casings are to be installed or mounted to permit ventilating air to sweep across gas utilization units and be exhausted at the top of such ventilation hoods or casings.~~

~~5 Ventilation inlets and discharges for required ventilation systems are to be installed in safe locations.~~

~~6 Gas detection systems provided in accordance with the requirements given in 1 and 4 above are to comply with 13.6.2 and 13.6.4 through 13.6.8, Part N as applicable. They are to activate alarms at 30% of lower flammable limits and shut down the master gas fuel valves referred to in 10 above before gas concentrations reach 60% of lower flammable limits.~~

~~7 Gas fuel supply arrangements are to comply with the requirements given in 1 to 6 above. In such cases, complete systems for gas processing, i.e. storage vessels, compressors, separators, filters, pressure control valves, etc., are to be located in hazardous areas and separated from engine and boiler rooms by gas-tight bulkheads.~~

~~8 Each gas utilization unit is to be provided with a set of three automatic valves. Two of these valves are to be fitted in a series onto gas fuel pipes leading to consuming equipment. A pipe that vents to a safe open air location is to be installed between this series of two valves, and the third valve is to be fitted onto that vent pipe. These valves are to be arranged so that failure of necessary forced draught, loss of flame on boiler burners, abnormal pressure in gas fuel supply lines, or failure of valve control systems will cause the two gas fuel valves which are in a series to automatically close and the vent valve to automatically open. Alternatively, the function of one of the valves in the series and the vent valve can be incorporated into one valve body arranged so that, in cases where one of the above conditions occur, the flow to gas utilization units will be blocked and the vent opened. The three shutoff valves are to be arranged for manual reset.~~

~~9 Gas fuel piping in machinery spaces is to comply with 5.2 to 5.5, Part N as needed. Such piping is to, as far as practicable, have welded joints. Those parts of gas fuel piping, which are not enclosed in ventilated pipes or ducts according to 16.3.1, Part N and are on open decks outside crude oil areas are to have full penetration butt welded joints and are to be fully radiographed.~~

~~10 Master gas fuel valves that can be closed from within machinery spaces are to be provided within crude oil areas. Such valves are to be arranged to automatically close in cases where gas leakage is detected, duct or casing ventilation loss or double wall gas fuel piping pressurization loss occurs.~~

~~11 Provisions are to be made for inerting and gas freeing the portion of gas fuel piping systems located in machinery spaces.~~

EFFECTIVE DATE AND APPLICATION

1. The effective date of the amendments is 1 July 2016.
2. Notwithstanding the amendments to the Rules, the current requirements may apply to ships the keels of which were laid or which were at *a similar stage of construction* before the effective date.
(Note) The term “*a similar stage of construction*” means the stage at which the construction identifiable with a specific ship begins and the assembly of that ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is the less.