

(3) Air operated remote control valves must be provided with self-indicating lines at the control boards which indicate the desired valve positions, i.e., open or closed.

(h) Suitable drains shall be provided at low points of piping systems.

(i) Valves and cocks shall be located so as to be easily accessible and valves or cocks attached to the shell of the vessel or to sea chests located below the floorplating shall be operable from above the floorplates.

(j) When welded fabrication is employed, a sufficient number of detachable joints shall be provided to facilitate overhauling and maintenance of machinery and appurtenances. The joints shall be located so that adequate space is provided for welding, and the location of the welds shall be indicated on the plans.

(k) Piping, including valves, pipe fittings and flanges, conveying vapors, gases or liquids whose temperature exceeds 150 °F., shall be suitably insulated where necessary to preclude injury to personnel.

(l) Where pipes are run through dry cargo spaces they must be protected from mechanical injury by a suitable enclosure or other means.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9978, June 17, 1970; CGD 77-140, 54 FR 40607, Oct. 2, 1989; USCG-2003-16630, 73 FR 65178, Oct. 31, 2008]

§ 56.50-10 Special gauge requirements.

(a) Where pressure-reducing valves are employed, a pressure gauge must be provided on the low-pressure side of the reducing station.

(b) Fuel oil service, fire, cargo and fuel oil transfer and boiler feed pumps must be provided with a pressure gage on the discharge side of the pump. Additional information pertaining to fire pumps is in §34.10-5 of subchapter D (Tank Vessels), §76.10-5 of subchapter H (Passenger Vessels), §95.10-5 of subchapter I (Cargo and Miscellaneous Vessels), and §108.417 of subchapter IA (Mobile Offshore Drilling Units) of this chapter.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9978, June 17, 1970; CGD 73-251, 43 FR 56799, Dec. 4, 1978; USCG-2003-16630, 73 FR 65178, Oct. 31, 2008]

§ 56.50-15 Steam and exhaust piping.

(a) The design pressures of the steam piping connected to the boiler drum or to the superheater inlet header shall not be less than the lowest pressure setting of any drum safety valve. The value of allowable stress for the material shall not exceed that corresponding to the saturated steam temperature at drum pressure and shall be selected as described in §56.07-10(e).

(b) Main superheater outlet piping systems, desuperheated piping systems, and other auxiliary superheated piping systems led directly from the boiler superheater shall be designed for a pressure not less than the pressure at which the superheater safety valve is set. In the case of a superheated safety valve which is drum pilot actuated, the design pressure of such piping systems shall not be less than the pressure setting of the actuator valve on the drum. Where it can be shown that the limitations set forth in 102.2.4 of ASME B31.1 (incorporated by reference; see 46 CFR 56.01-2) will not be exceeded, the design pressure of such piping systems may be reduced but shall not be less than the pressure setting of the actuator valve on the drum less the pressure drop through the superheater, including associated piping and a control desuperheater if fitted, at the normal rated operating condition. In both cases, the value of allowable stress shall be selected using a temperature not less than that of the steam at the superheater outlet at the normal rated operating conditions in accordance with §56.07-10(e). Valves and fittings shall be selected for the above temperature and pressure from the accepted standards in 46 CFR 56.60-1, Table 56.60-1(b), using the pressure-temperature rating in the standard.

(c) Steam stop valves in sizes exceeding 6 inches shall be fitted with bypasses for heating the line and equalizing the pressure before the valve is opened.

(d) In multiple boiler installations each boiler's main, auxiliary and desuperheated steam lines shall be fitted with two valves, one a stop valve and one a stop check valve.

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(e) Main and auxiliary steam stop valves must be readily accessible, operable by one person and arranged to seat against boiler pressure.

(f) The auxiliary steam piping of each vessel equipped with more than one boiler must be so arranged that steam for the whistle and other vital auxiliary systems, such as the electrical-generation plant, may be supplied from any power boiler.

(g) Steam and exhaust pipes shall not be led through coal bunkers or dry cargo spaces unless approved by the Commandant.

(h)(1) Steam piping, with the exception of the steam heating system, must not be led through passageways, accommodation spaces, or public spaces unless the arrangement is specifically approved by the Marine Safety Center.

(2) Steam pressure in steam heating systems must not exceed 150 pounds per square inch gage, except that steam pressure for accommodation and public space heating must not exceed 45 pounds per square inch gage.

(3) Steam lines and registers in non-accommodation and non-public spaces must be suitably located and/or shielded to minimize hazards to any personnel within the space. Where hazards in a space cannot be sufficiently minimized, the pressure in the steam line to that space must be reduced to a maximum of 45 pounds per square inch gage.

(4) High temperature hot water for heating systems may not exceed 375°F.

(i) Where positive shutoff valves are fitted in the exhaust lines of machinery, and the exhaust side, including engine steam cylinders and chests, turbine casings, exhaust piping and shutoff valves, is not designed for the full inlet pressure, the exhaust side must be protected from over pressure by one of the following means:

(1) A full flow relief valve in the exhaust side so set and of sufficient capacity to prevent the exhaust side from being accidentally or otherwise subjected to a pressure in excess of its maximum allowable pressure.

(2) A sentinel relief valve or other warning device fitted on the exhaust side together with a back pressure trip device which will close the inlet valve prior to the exhaust side pressure ex-

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ceeding the maximum allowable pressure. A device that will throttle the inlet valve, so that the exhaust side does not exceed the maximum allowable pressure, may be substituted for the back pressure trip.

(j) Shore steam connections shall be fitted with a relief valve set at a pressure not exceeding the design pressure of the piping.

(k) Means must be provided for draining every steam pipe in which dangerous water hammer might otherwise occur.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9978, June 17, 1970; CGFR 72-59R, 37 FR 6189, Mar. 25, 1972; CGD 73-254, 40 FR 40165, Sept. 2, 1975; CGD 77-140, 54 FR 40607, Oct. 2, 1989; CGD 83-043, 60 FR 24772, May 10, 1995; USCG-2003-16630, 73 FR 65178, Oct. 31, 2008]

§ 56.50-20 Pressure relief piping.

(a) *General.* There must be no intervening stop valves between the vessel or piping system being protected and its protective device or devices, except as specifically provided for in other regulations or as specifically authorized by the Marine Safety Center.

(b) *Discharge lines (reproduces 122.6.2(d)).* Discharge lines from pressure-relieving safety devices shall be designed to facilitate drainage.

(c) *Stop valves.* Stop valves between the safety or relief valve and the point of discharge are not permitted, except as specifically provided for in other regulations or as specifically approved by the Marine Safety Center.

(d) *Reference.* See also § 56.07-10(a) and (b) for specific requirements.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9979, June 17, 1970; CGD 77-140, 54 FR 40607, Oct. 2, 1989]

§ 56.50-25 Safety and relief valve escape piping.

(a) Escape piping from unfired steam generator, boiler, and superheater safety valves shall have an area of not less than that of the combined areas of the outlets of all valves discharging thereto and shall be led as near vertically as practicable to the atmosphere.

(b) Expansion joints or flexible pipe connections shall be fitted in escape piping. The piping shall be adequately supported and installed so that no