

Subpart 61.10—Tests and Inspections of Pressure Vessels

§ 61.10-1 Scope.

All pressure vessels aboard ships, mobile offshore drilling units, and barges are subject to periodic inspection.

[CGD 68-82, 33 FR 18890, Dec. 18, 1968, as amended by CGD 73-251, 43 FR 56801, Dec. 4, 1978; CGD 95-012, 60 FR 48050, Sept. 18, 1995]

§ 61.10-5 Pressure vessels in service.

(a) *Basic requirements.* Each pressure vessel must be examined or tested every 5 years. The extent of the test or examination should be that necessary to determine that the pressure vessel's condition is satisfactory and that the pressure vessel is fit for the service intended.

(b) *Internal and external tests and inspections.* (1) Each pressure vessel listed on the Certificate of Inspection must be thoroughly examined externally every 5 years.

(2) In addition, each pressure vessel listed on the Certificate of Inspection that is fitted with a manhole or other inspection opening so it can be satisfactorily examined internally, must be opened for internal examination every 5 years.

(3) No pressure vessel need be hydrostatically tested except when a defect is found that, in the marine inspector's opinion, may affect the safety of the pressure vessel. In this case, the pressure vessel should be hydrostatically tested at a pressure of $1\frac{1}{2}$ times the maximum allowable working pressure.

(c) *Special purpose vessels.* (1) If your vessel's Certificate of Inspection is renewed annually, the following must be examined under operating conditions at each inspection for certification: all tubular heat exchangers, hydraulic accumulators, and all pressure vessels used in refrigeration service.

(2) If your vessel's Certificate of Inspection is renewed less often than annually, the following must be examined under operating conditions twice every 5 years: all tubular heat exchangers, hydraulic accumulators, and all pressure vessels used in refrigeration service.

(3) No more than 3 years may elapse between any examination and its immediate predecessor.

(d) *Hydrostatic tests under pressure.* Each pressure vessel, other than one exempted by this section, must be subjected to a hydrostatic test at a pressure of $1\frac{1}{4}$ times the maximum allowable working pressure twice within any five-year period, except that no more than three years may elapse between any test and its immediate predecessor.

(e) *Exemptions from hydrostatic tests.* The following pressure vessels will not normally be subjected to a hydrostatic test:

- (1) Tubular heat exchangers.
- (2) Pressure vessels used in refrigeration service.
- (3) Hydraulic accumulators.
- (4) Pressure vessels which have been satisfactorily examined internally by a marine inspector and in which no defects have been found which impair the safety of the pressure vessel.

(5) Pressure vessels which were initially pneumatically tested in accordance with part 54 of this subchapter.

(6) Pressure vessels not stamped with the Coast Guard Symbol.

(f) *Compressed gas or hazardous liquid pressure vessel tests.* Cargo tanks of pressure vessel configuration containing liquefied, compressed gases or hazardous liquids must be inspected and tested as required by the applicable regulations published in subchapter D or subchapter I of this chapter.

(g) *Bulk storage tanks.* Each bulk storage tank containing refrigerated liquefied CO₂ for use aboard a vessel as a fire-extinguishing agent shall be subjected to a hydrostatic test of $1\frac{1}{2}$ times the maximum allowable working pressure in the tenth year of the installation and at ten-year intervals thereafter. After the test, the tank should be drained and an internal examination made. Parts of the jacket and lagging on the underside of the tank designated by the marine inspector must be removed at the time of the test so the marine inspector may determine the external condition of the tank.

(h) *Pneumatic tests.* (1) Pressure vessels that were pneumatically tested before being stamped with the Coast

Guard Symbol must be examined internally twice every 5 years and examined externally at each Inspection for Certification. No more than 3 years may elapse between any external examination and its immediate predecessor.

(2) For tanks whose design precludes a thorough internal or external examination, the thickness must be determined by a nondestructive method acceptable to the Officer in Charge, Marine Inspection.

(3) If (due to the product carried) your vessel's inspection intervals are prescribed in subchapter D (Tank Vessels), subchapter I (Cargo and Miscellaneous Vessels), or subchapter I-A (Mobile Offshore Drilling Units), you must comply with the pneumatic test regulations there, instead of the ones in this section.

(i) *Safety or relief valves on pressure vessels.* (1) If your vessel's Certificate of Inspection is renewed annually, the marine inspector must check the settings of the safety or relief valves on all pressure vessels, except cargo tanks, at each inspection for certification.

(2) If your vessel's Certificate of Inspection is renewed less often than annually, the marine inspector must check the settings of the safety or relief valves on all pressure vessels, except cargo tanks, twice every 5 years. No more than 3 years may elapse between any check and its immediate predecessor.

(3) Cargo tank safety or relief valves must be checked at the interval required in subchapter D (Tank Vessels) or subchapter I (Cargo and Miscellaneous Vessels) of this chapter.

[CGFR 68-82, 33 FR 18890, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9980, June 17, 1970; CGD 73-251, 43 FR 56801, Dec. 4, 1978; CGD 77-147, 47 FR 21811, May 20, 1982; CGD 86-033, 53 FR 36024, Sept. 16, 1988; CGD 83-043, 60 FR 24782, May 10, 1995; CGD 95-028, 62 FR 51202, Sept. 30, 1997; USCG-1999-6216, 64 FR 53225, Oct. 1, 1999; USCG-1999-4976, 65 FR 6500, Feb. 9, 2000]

Subpart 61.15—Periodic Tests of Piping Systems

§ 61.15-1 Scope.

In conducting hydrostatic tests on piping, the required test pressure shall

be maintained for a sufficient length of time to permit an inspection to be made of all joints and connections. The setting of the relief valve or safety valve will be considered as establishing the maximum allowable working pressure of the system.

[CGFR 68-82, 33 FR 18890, Dec. 18, 1968, as amended by CGD 95-012, 60 FR 48050, Sept. 18, 1995]

§ 61.15-5 Steam piping.

(a) Main steam piping shall be subjected to a hydrostatic test equal to $1\frac{1}{4}$ times the maximum allowable working pressure at the same periods prescribed for boilers in § 61.05-10. The hydrostatic test shall be applied from the boiler drum to the throttle valve. If the covering of the piping is not removed, the test pressure shall be maintained on the piping for a period of ten minutes. If any evidence of moisture or leakage is detected, the covering shall be removed and the piping thoroughly examined.

(b) All steam piping subject to pressure from the main boiler should be subjected to a hydrostatic test at a pressure of $1\frac{1}{4}$ times the maximum allowable working pressure of the boiler after every five years of service except as otherwise provided for in paragraph (a) of this section. Unless the covering of the piping is removed, the test pressure must be maintained on the piping for ten minutes. If any evidence of moisture or leakage is detected, the covering should be removed and the piping thoroughly examined. No piping with a nominal size of 3 inches or less need be hydrostatically tested.

(c) The setting of safety and relief valves installed in piping systems shall be checked by the marine inspector at each inspection for certification for vessels whose Certificates of Inspection are renewed each year. For other vessels, the setting must be checked twice within any 5-year period, and no more than 3 years may elapse between any check and its immediate predecessor.

[CGFR 68-82, 33 FR 18890, Dec. 18, 1968, as amended by CGD 73-248, 39 FR 30839, Aug. 26, 1974; CGD 83-043, 60 FR 24782, May 10, 1995; USCG-1999-4976, 65 FR 6500, Feb. 9, 2000]