the vapors are such that their release will not create a hazard.

(e) If the design of a safety or relief valve is such that liquid can collect on the discharge side of the disk, the valve shall be equipped with a drain at the lowest point where liquid can collect (for installation, see UG–134 of section VIII of section VIII of the ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 54.01–1).

(f) Cast iron may be employed in the construction of relief valves for pressures not exceeding 125 pounds per square inch and temperatures not exceeding 450 °F. Seats or disks of cast iron are prohibited.

(g) The spring in a relief valve in service for pressures up to and including 250 pounds per square inch shall not be reset for any pressure more than 10 percent above or 10 percent below that for which the relief valve is marked. For higher pressures, the spring shall not be reset for any pressure more than 5 percent above or 5 percent below that for which the relief valve is marked.

(h) The rated relieving capacity of safety and relief valves for use on pressure vessels shall be based on actual flow test data and the capacity shall be certified by the manufacturer in accordance with one of the following:

(1) 120 percent of the valve set pressure for valves rated in accordance with CGA S–1.2 (incorporated by reference; see 46 CFR 54.01–1).

(2) 110 percent of the valve set pressure for valves rated in accordance with UG–131 of section VIII of section VIII of the ASME Boiler and Pressure Vessel Code.

(3) 103 percent of the valve set pressure for steam in accordance with PG–69 of section VIII of the ASME Boiler and Pressure Vessel Code.

[CGFR 68–82, 33 FR 18828, Dec. 18, 1968, as amended by CGD 81–79, 50 FR 9436, Mar. 8, 1985; USCG–2003–16630, 73 FR 65170, Oct. 31, 2008]

§ 54.15–13 Rupture disks (modifies UG–127).

(a) Paragraph UG–127 of section VIII of the ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 54.01–1) provides for the use of rupture disks in series with spring loaded safety or relief valves.

(b) For certain pressure vessels containing substances which may render a relief or safety valve inoperative, or where the installation of a valve is considered impractical, the Commandant may authorize or require the use of a rupture disk in parallel with or in lieu of a spring loaded safety or relief valve. These rupture disks shall:

(1) Comply with the general provisions of § 54.15–5 except as noted otherwise in this section;

(2) Have a capacity for discharge such that the volume of release is sufficient to prevent the internal pressure from exceeding 120 percent of the ''maximum allowable working pressure'' with the pressure vessel exposed to fire conditions (see § 54.15–25); and,

(3) Operate at a pressure level which does not produce fatigue failure of the disk. The normal maximum operating pressure multiplied by 1.3 shall not exceed the nominal disk burst pressure. (Notice that this restriction for protection of the rupture disk will usually require operation below the ''maximum allowable working pressure'' of the pressure vessel and therefore should be considered in design.)

(c) All disks shall be oriented so that if rupture occurs, the disk fragments and pressure vessel discharge will be directed away from operating personnel and vital machinery.

[CGFR 68–82, 33 FR 18828, Dec. 18, 1968, as amended by USCG–2003–16630, 73 FR 65170, Oct. 31, 2008]

§ 54.15–15 Relief devices for unfired steam boilers, evaporators, and heat exchangers (modifies UG–126).

(a) An approved safety valve set to relieve at a pressure not exceeding the ''maximum allowable working pressure'' of the shell shall be fitted to all unfired steam boilers and evaporators except for evaporators of the atmospheric type designed for vapor discharge direct to a distiller with no shutoff valve in the discharge line. The distiller connected to atmospheric evaporators shall be fitted with a vent to prevent a buildup in pressure. In no case shall the vent be less than 1½ inches in diameter. Evaporators operating between atmospheric pressure and 15 p.s.i.g., may use a rupture disc as an alternative to the safety valve.