

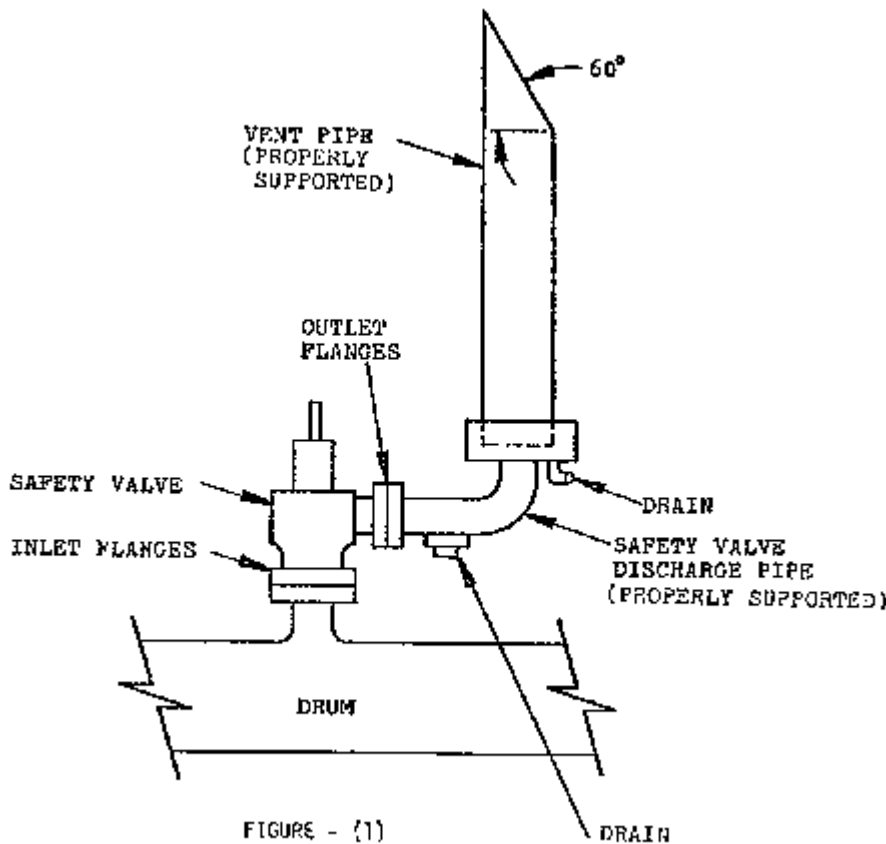
875—92.7(89) Safety valves. This rule applies to power boilers installed prior to July 1, 1983.

92.7(1) The use of weighted-lever safety valves or safety valves having either the seat or disk of cast iron is prohibited. All power boilers shall have direct, springloaded, pop-type safety valves that conform to the construction or installation code.

92.7(2) Each boiler shall have at least one safety valve. All boilers with more than 500 square feet of water heating surface or an electric power input of more than 1100 kilowatts shall have two or more safety valves.

92.7(3) The safety valve or valves shall be connected to the boiler independent of any other steam connection and attached as close as possible to the boiler without unnecessary intervening pipe or fittings.

92.7(4) No valves of any type shall be placed between the safety valve and the boiler. If an escape pipe is used, no valve shall be placed between the safety valve and the atmosphere. When an escape pipe is used, it shall be at least full size of the safety valve discharge and fitted with an open drain to prevent water lodging in the upper part of the safety valve or escape pipe. Any elbow on an escape pipe shall be located close to the safety valve outlet or the escape pipe and shall be anchored and supported securely. All safety valve discharges shall be so located or piped as to be carried away from walkways or platforms. When the safety valve is vented to the outside atmosphere, the second escape pipe shall be arranged as shown in Figure 1.



92.7(5) The safety valve capacity of each boiler shall be such that the safety valve or valves will discharge all the steam that can be generated by the boiler without allowing the pressure to rise more than 5 percent above the highest pressure to which any valve is set and in no case to more than 6 percent above maximum allowable working pressure.

92.7(6) One or more safety valves on every boiler shall be set at or below the maximum allowable working pressure. The remaining valves may be set within a range of 3 percent above the maximum allowable working pressure, but the range setting of all the safety valves on a boiler shall not exceed 10 percent of the highest pressure at which any valve is set.

92.7(7) When two or more boilers operating at different pressures and safety valve settings are interconnected, the lowest pressure boilers or interconnected piping shall be equipped with safety valves of sufficient capacity to prevent overpressure, considering the maximum generating capacity of all boilers.

92.7(8) In those cases where the boiler is supplied with feedwater directly from water mains without the use of feeding apparatus (not including return traps), safety valves shall not be set at a pressure greater than 94 percent of the lowest pressure maintained in the supply main feeding the boiler.

92.7(9) The minimum safety valve relieving capacity shall be determined on the basis of the pounds of steam generated per hour per square foot of boiler heating surface and waterwall heating surface as given in the following table. This method shall not be used on electric boilers, waste heat boilers and forced-flow steam generators without a fixed steam and water line.

Minimum Pounds of Steam Per Hour Per Square
Foot of Heating Surface

Boiler Heating Surface:	Firetube Boilers	Watertube Boilers
Hand Fired.....	5	6
Stoker Fired.....	5	8
Oil, Gas, or Pulverized Fuel Fires.....	8	10
Waterwall Heating Surface:		
Hand Fired.....	8	8
Stoker Fired.....	10	12
Oil, Gas, or Pulverized Fuel Fires.....	14	16

92.7(10) Safety valve sizing.

a. When a boiler is fired only by a gas having a heat value not in excess of 200 Btu's per cubic feet the minimum safety valve relieving capacity may be based on the value given for hand-fired boilers above.

b. The minimum safety valve relieving capacity for electric boilers shall be 3½ pounds per hour per kilowatt input.

c. Maximum steaming capacity for safety valves shall be the value stated on design documents or shall be calculated by multiplying horsepower by 34.5.