

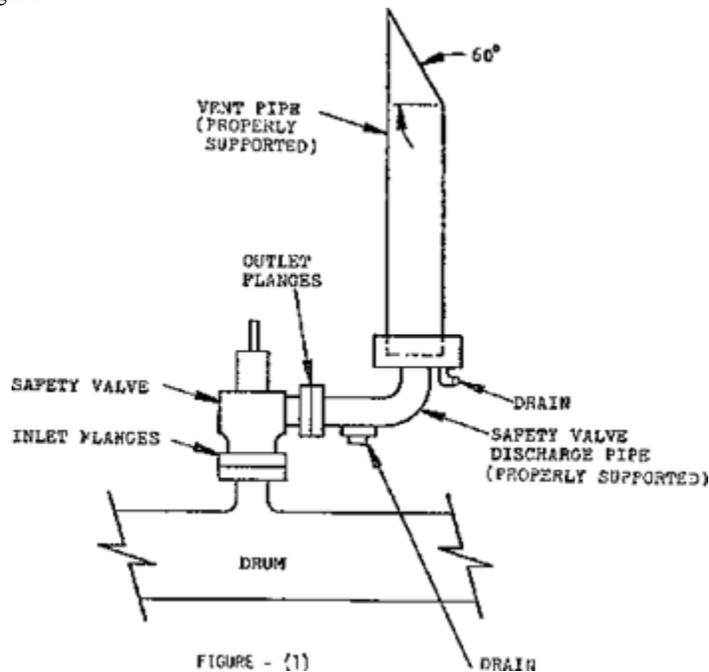
481—392.6(89) Safety valve requirements. This rule applies to power boilers installed prior to July 1, 1983.

392.6(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 will have direct, springloaded, pop-type safety valves that conform to the construction or installation code.

392.6(2) Each boiler will 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 will have two or more safety valves.

392.6(3) The safety valve or valves will 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.

392.6(4) No valves of any type will be placed between the safety valve and the boiler. If an escape pipe is used, no valve will be placed between the safety valve and the atmosphere. When an escape pipe is used, it will 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 will be located close to the safety valve outlet or the escape pipe and will be anchored and supported securely. All safety valve discharges will 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 will be arranged as shown in Figure 1.



392.6(5) The safety valve capacity of each boiler will 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.

392.6(6) One or more safety valves on every boiler will 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 will not exceed 10 percent of the highest pressure at which any valve is set.

392.6(7) When two or more boilers operating at different pressures and safety valve settings are interconnected, the lowest pressure boilers or interconnected piping will be equipped with safety valves of sufficient capacity to prevent overpressure, considering the maximum generating capacity of all boilers.

392.6(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 will not be set at a pressure greater than 94 percent of the lowest pressure maintained in the supply main feeding the boiler.

392.6(9) The minimum safety valve relieving capacity will 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 will 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

- 392.6(10)** Safety valve sizing.
- a. When a boiler is fired only by a gas having a heat value not in excess of 200 Btu per cubic foot, 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 will be 3½ pounds per hour per kilowatt input.
 - c. Maximum steaming capacity for safety valves will be the value stated on design documents or will be calculated by multiplying horsepower by 34.5.

[ARC 8888C, IAB 2/19/25, effective 3/26/25; Editorial change: IAC Supplement 7/9/25]