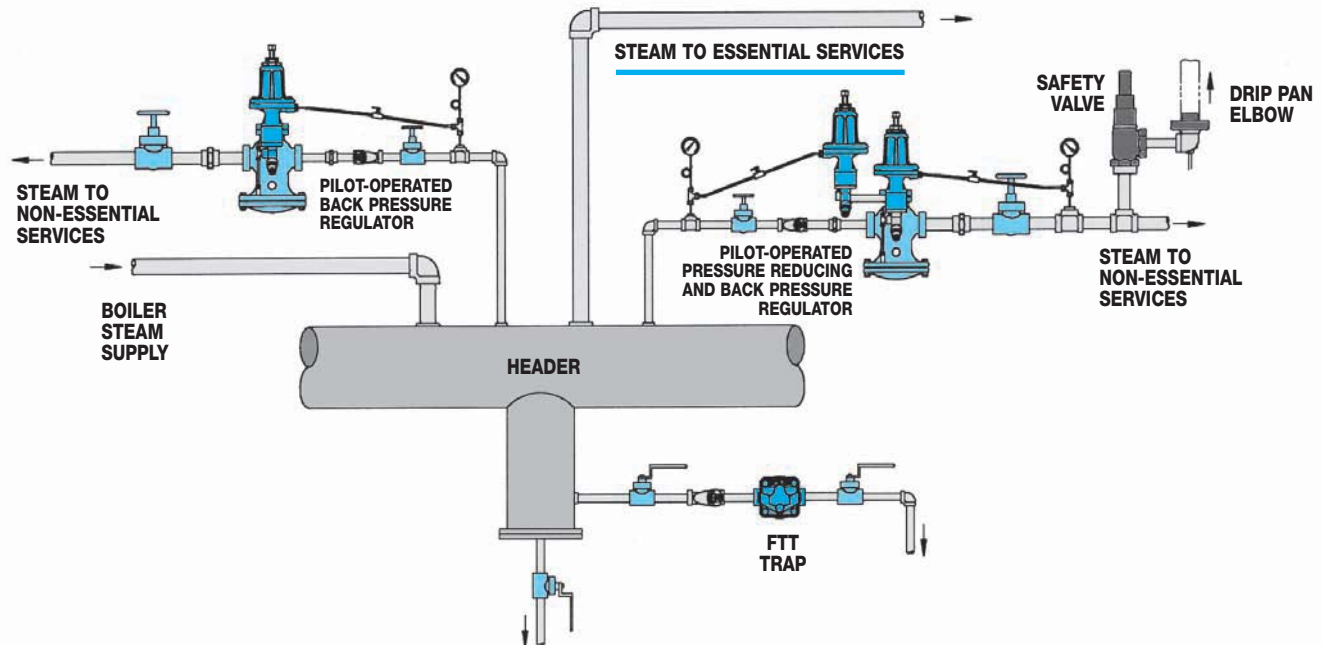


Over Pressure Protection Methods

Using "P" and "BP" Pilots

Back Pressure Regulators for Boiler Overload Protection

In steam systems with several applications of varying importance, a back pressure regulator may be used to prevent overloading of the boiler by isolating non-essential loads from critical processes in the event steam demand exceeds boiler output. When steam demand is greater than the capacity the boiler can generate, pressure in the boiler will drop, possibly upsetting the control balance in the boiler resulting in the generation of wet steam. Using back pressure regulators on the non-essential application supply lines allows isolation of these applications at times of peak demand by shutting off steam flow to areas deemed non-essential. This ensures that boiler demand is not exceeded and steam flow is maintained to critical processes until demand subsides and the boiler is able to catch up.



PILOT-OPERATED REGULATING VALVES

Pressure Override Protection of Regulator Supply Lines

On multi-stage pressure reducing applications where a rise in control pressure due to failure of the final supply regulator could result in equipment damage and/or personnel injury, a secondary pressure pilot may be added to provide override protection of a steam supply line. During normal operation, the main pressure pilot on the 1st stage regulator provides intermediate pressure control while the additional "monitor" pilot senses final control pressure and remains open due to a slightly higher setting than the final control pressure setting. Should the 2nd stage regulator fail for any reason, increasing supply pressure will begin to close the monitor pressure pilot of the 1st stage regulator, thus overriding the main control pilot preventing final supply pressure from increasing. This overpressure protection can similarly be offered on single-stage reducing valves by protecting against failure of the main control pilot.

