Subpart 58.30—Fluid Power and Control Systems

§ 58.30–1 Scope.
(a) This subpart contains requirements for fluid power transmission and control systems and appurtenances. Except as otherwise provided for in this section, these requirements are applicable to the following fluid power and control systems:

1. Steering apparatus, main and auxiliary, including bow thruster systems.
2. Cargo hatch operating systems unless fitted with an alternate mechanical means of operation and approved by the Commandant as hydraulically or pneumatically fail-safe. A system is considered to be fail-safe if a component failure will result in a slow and controlled release of the loading so as not to endanger personnel.
3. Watertight door operating system.
4. Automatic propulsion boiler system.
5. Starting systems for internal combustion engines used for main propulsion, main or auxiliary power, as the prime mover for any required emergency apparatus, or as the source of propulsion power in ship maneuvering thruster systems.
6. Centralized control system of main propulsion and auxiliary machinery.
7. Lifeboat handling equipment.
8. Controllable pitch propeller system.
9. Installations used to remotely control components of piping systems listed in §56.01–10(c)(1) of this subchapter.
10. All systems containing a pneumatic or hydro pneumatic accumulator. In the case of hydro pneumatic accumulators where it can be shown to the satisfaction of the Commandant that due to friction losses, constriction, or other design features, the hazard of explosive rupture does not exist downstream of a certain point in the hydraulic system, the requirements of this subpart will
§ 58.30–5 Design requirements.

(a) The requirements of part 56 are also applicable to piping and fittings in fluid power and control systems listed in § 58.30–1 of this part, except as modified herein. The designer should consider the additional pressure due to hydraulic shock and should also consider the rate of pressure rise caused by hydraulic shock.

(b) The system shall be so designed that proper functioning of any unit shall not be affected by the back pressure in the system. The design shall be such that malfunctioning of any unit in the system will not render any other connected or emergency system inoperative because of back pressure.

(c) Pneumatic systems with a maximum allowable working pressure in excess of 150 pounds per square inch shall be designed with a surge tank or other acceptable means of pulsation dampening.

(d) Each pneumatic system must minimize the entry of oil into the system and must drain the system of liquids.

§ 58.30–10 Hydraulic fluid.

(a) The requirements of this section are applicable to all fluid power transmission and control systems installed on vessels subject to inspection.

(b) The fluid used in hydraulic power transmission systems shall have a flashpoint of not less than 200 °F. for pressures below 150 pounds per square inch and 315 °F. for pressures 150 pounds per square inch and above, as determined by ASTM D 92 (incorporated by reference; see § 58.03–1), Cleveland “Open Cup” test method.

(c) The chemical and physical properties of the hydraulic fluid shall be suitable for use with any materials in the system or components thereof.

(d) The hydraulic fluid shall be suitable for operation of the hydraulic system through the entire temperature range to which it may be subjected in service.

(e) The recommendations of the system component manufacturers and ANSI B93.5 (incorporated by reference; see 46 CFR 58.03–1) shall be considered in the selection and use of hydraulic fluid.

§ 58.30–15 Pipe, tubing, valves, fittings, pumps, and motors.

(a) The requirements of this section are applicable to those hydraulic and pneumatic systems listed in § 58.30–1.

(b) Materials used in the manufacture of tubing, pipes, valves, flanges, and fittings shall be selected from those specifications that appear in 46 CFR 56.60–1, Table 56.60–1(a) or 46 CFR 56.60–2, Table 56.60–2(a); or they may be selected from the material specifications of Section I or Section VIII of the ASME Boiler and Pressure Vessel Code (both incorporated by reference; see 46 CFR 58.03–1) if not prohibited by the section of this subchapter dealing with