MSC Guidelines for Lube Oil Systems

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References:

a. 46 CFR 56.50-60 Systems containing oil (Subchapter F)
b. 46 CFR 56.50-80 Lubricating-oil systems (Subchapter F)
c. 46 CFR 31.30-1 (Subchapter D)
d. 46 CFR 70.20-1 (Subchapter H)
e. 46 CFR 90.20-1 (Subchapter I)
f. 46 CFR 119.710 (Subchapter K)
g. 46 CFR 128.110 & 128.210 (Subchapter L)
h. 46 CFR 182.710 (Subchapter T)
i. 46 CFR 188.20-1 (Subchapter U)

Contact Information:

If you have any questions or comments concerning this document, please contact the Marine Safety Center (MSC) by email or phone. Please refer to the Procedure Number E1-17.

Email: MSC@uscg.mil
Phone: 703-872-6729
Website: http://homeport.uscg.mil/msc

Responsibilities:

Using applicable portions of references (a) through (i), the submitter shall provide sufficient documentation and plans to indicate compliance with the applicable requirements. The submission shall be made in triplicate. To facilitate plan review and project management, all plans and information specified in these guidelines should be submitted as one complete package through a single point of contact for the project.

General Guidance:

Vessels Subject to Subchapter F

Materials

- Materials shall conform to the specifications/standards listed in 56.60. Alternatively, the materials may be selected from the specifications listed in sections, I, III, and VIII of the ASME code.

- The use of heat sensitive piping materials is prohibited. Generally, the use of bronze piping components is not acceptable. (56.60-20)

General Guidance (continued):

- Oil piping passing through a non-oil tank without stop valves must be of schedule 80 and its joints must be welded. (56.50-60(l))

Systems Containing Oil

The following section contains guidance that is applicable to all systems containing oil regulated under 46 CFR Subchapter F.

- Oil piping systems must be separate from other piping systems as far as practicable and positive means shall be provided to prevent interconnection in service. Pumps used to transfer oil must have no discharge connections to fire mains, boiler feed systems, or condensers. (56.50-60(a))

- Filling pipes, with shutoff valves fitted at the filling end, may led directly from the deck into the tanks or to a manifold. Oil piping must not be led through accommodation spaces, except that low pressure fill piping, not normally used at sea, may pass through accommodation spaces if it is of steel construction. (56.50-60(c))

- Piping subject to internal head pressure from oil in the tank must be fitted with remotely operable positive shutoff valves located at the tank. The valves located on the outside of the tanks must be steel, ductile cast iron (A395) or nonferrous alloy having melting point > 1700°F. Valves located inside the tanks may be cast iron. (56.50-60(d)

- Power operated valves must be capable of being closed under all conditions. Local power operation and emergency manual operation is required. Fluid power operated valves, other than those opened against spring pressure, must have a dedicated energy storage system that is protected against fire and collision, The energy source shall have sufficient capacity to cycle all connected valves from initial position to the opposite position and return. (56.50-60 (d))

- Oil piping must not run through feed or potable water tanks. (56.50-60(h))

- Oil piping drains, strainers and other equipment subject to leakage must be fitted with drip pans. (56.50-60(k))

General Guidance (continued):

Lubricating Oil Systems

The following section contains guidance specifically applicable to lubrication oil systems regulated under 46 CFR Subchapter F.

- Lubricating oil piping shall be independent of other piping systems and must be provided with necessary pumps, coolers, heater, filters, etc. for proper operation. (56.50-80(b)-(e))
- Diesel engine lubrication systems shall be so arranged that vapors from the sump tank may not be discharged back into the engine crank case. (56.50-80 (f))
- Sight flow glasses must not be heat sensitive (must withstand 1700°F flame for 1 hour without failure). (56.50-80(h))
- When oil needs to be heated to lower its viscosity, heating coils must be properly installed in each tank. (56.50-60(b))
- Piping conveying oil must run well away from hot surfaces. Piping, in proximity of equipment or lines having open flame or having parts operating above 500°F, must be of seamless steel. (56.50-60(j))
- Lubricating oil systems shall be designed to function satisfactorily when the vessel has a permanent 15 degree list and a permanent 5 degree trim. (56.50-80(a))

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