

§ 61.20-21

(b) On tailshafts with a taper, keyway, (if fitted) and propeller designed in accordance with American Bureau of Shipping standards to reduce stress concentrations, the forward 1/3 of the shaft's taper section must be non-destructively tested in addition to a visual inspection of the entire shaft.

(c) On tailshafts with a propeller fitted to the shaft by means of a coupling flange, the flange, the fillet at the propeller end, and each coupling bolt must be nondestructively tested in addition to a visual inspection of the entire shaft.

[CGD 84-024, 52 FR 39652, Oct. 23, 1987, as amended by CGD 84-024, 53 FR 32231, Aug. 24, 1988]

§ 61.20-21 Extension of examination interval.

The Commandant (G-MOC) may authorize extensions of the interval between tailshaft examinations.

[CGD 84-024, 52 FR 39652, Oct. 23, 1987, as amended by CGD 95-072, 60 FR 50463, Sept. 29, 1995; CGD 96-041, 61 FR 50728, Sept. 27, 1996]

§ 61.20-23 Tailshaft clearance; bearing wear.

(a) Water lubricated bearings, other than rubber, must be rebushed as follows:

(1) Where the propelling machinery is located amidship, the after stern tube bearing must be rebushed when it is worn down to 6.4 mm (0.25 in) clearance for shafts of 229 mm (9 in) or less in diameter, 7.95 mm (0.3125 in) clearance for shafts exceeding 229 mm (9 in) but not exceeding 305 mm (12 in) in diameter, and 9.53 mm (0.375 in) clearance for shafts exceeding 305 mm (12 in) in diameter.

(2) Where the propelling machinery is located aft, the after stern tube bearing must be rebushed when wear down is 1.6 mm (.0625 in) less than the applicable clearance for propelling machinery located amidship.

(b) Water lubricated rubber bearings must be rebushed when any water groove is half the original depth.

(c) Oil lubricated bearings must be rebushed when deemed necessary by the Officer in Charge, Marine Inspection. The manufacturer's recommenda-

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tion shall be considered in making this determination.

[CGD 78-153, 45 FR 52388, Aug. 7, 1980]

Subpart 61.30—Tests and Inspections of Fired Thermal Fluid Heaters

SOURCE: CGD 80-064, 49 FR 32193, Aug. 13, 1984, unless otherwise noted.

§ 61.30-1 Scope.

The term *thermal fluid heater* as used in this part includes any fired automatic auxiliary heating unit which uses a natural or synthetic fluid in the liquid phase as the heat exchange medium and whose operating temperature and pressure do not exceed 204 °C (400 °F) and 225 psig, respectively. Thermal fluid heaters having operating temperatures and pressures higher than 204 °C (400 °F) and 225 psig, respectively, are inspected under subpart 61.05—Tests and Inspections of Boilers.

§ 61.30-5 Preparation of thermal fluid heater for inspection and test.

For visual inspection, access plates and manholes shall be removed as required by the marine inspector and the heater and combustion chambers shall be thoroughly cooled and cleaned.

[CGD 80-064, 49 FR 32193, Aug. 13, 1984, as amended by CGD 95-027, 61 FR 26002, May 23, 1996]

§ 61.30-10 Hydrostatic test.

All new installations of thermal fluid heaters must be given a hydrostatic test of 1½ times the maximum allowable working pressure. The test must be conducted in the presence of a marine inspector. No subsequent hydrostatic tests are required unless, in the opinion of the Officer in Charge Marine Inspection, the condition of the heater warrants such a test. Where hydrostatic tests are required, an inspection is made of all accessible parts under pressure. The thermal fluid may be used as the hydrostatic test medium.

§ 61.30-15 Visual inspection.

Thermal fluid heaters are examined by a marine inspector at the inspection for certification, periodic inspection and when directed by the Officer in

Charge Marine Inspection, to determine that the complete unit is in a safe and satisfactory condition. The visual examination includes, but is not limited to, the combustion chamber, heat exchanger, refractory, exhaust stack, and associated pumps and piping.

[CGD 80-064, 49 FR 32193, Aug. 13, 1984, as amended by USCG-1999-4976, 65 FR 6501, Feb. 9, 2000]

§ 61.30-20 Automatic control and safety tests.

Operational tests and checks of all safety and limit controls, combustion controls, programming controls, and safety relief valves must be conducted by the owner, chief engineer, or person in charge at the inspection for certification, periodic inspection, and when directed by the Officer in Charge, Marine Inspection, to determine that the control components and safety devices are functioning properly and are in satisfactory operating condition. These tests and checks must be conducted in the presence of a marine inspector and must include the following: proper prepurge, burner ignition sequence checks, operation of the combustion controls, limit controls, fluid flow controls, fluid level controls, high temperature control, proper postpurge control, and verification of the flame safeguard.

[CGD 88-057, 55 FR 24237, June 15, 1990, as amended by USCG-1999-4976, 65 FR 6501, Feb. 9, 2000]

NOTE: Sections 63.05-90 and 63.10-90 of this chapter may be referenced concerning operating tests.

Subpart 61.35—Design Verification and Periodic Testing for Automatic Auxiliary Boilers

SOURCE: CGD 88-057, 55 FR 24237, June 15, 1990, unless otherwise noted.

§ 61.35-1 General.

(a) All automatic auxiliary boilers except fired thermal fluid heaters must be tested and inspected in accordance with this subpart and subpart 61.05 of this part.

(b) Fired thermal fluid heaters must be tested and inspected in accordance with subpart 61.30 of this part.

(c) All controls, safety devices, and other control system equipment must be tested and inspected to verify their proper design, construction, installation, and operation.

(d) All tests must be performed after installation of the automatic auxiliary boiler and its control system(s) aboard the vessel.

(e) As far as practicable, test techniques must not simulate monitored system conditions by misadjustment, artificial signals, improper wiring, tampering, or revision of the system tested. The use of a synthesized signal or condition applied to a sensor is acceptable if the required test equipment is maintained in good working order and is periodically calibrated. Proper operation and proper calibration of test equipment must be demonstrated to the Officer in Charge, Marine Inspection.

§ 61.35-3 Required tests and checks.

(a) Tests and checks must include the following:

(1) *Safety (Programming) controls.* Safety controls must control and cycle the unit in the proper manner and sequence. Proper prepurge, ignition, postpurge, and modulation must be verified. All time intervals must be verified.

(2) *Flame safeguard.* The flame safeguard system must be tested by causing flame and ignition failures. Operation of the audible alarm and visible indicator must be verified. The shutdown times must be verified.

(3) *Fuel supply controls.* Satisfactory shutdown operation of the two fuel control solenoid valves must be verified. No visible leakage from the valves into the burner(s) must be verified.

(4) *Fuel oil pressure limit control.* A safety shutdown must be initiated by lowering the fuel oil pressure below the value required for safe combustion. System shutdown and the need for manual reset prior to automatic start-up must be verified.

(5) *Fuel oil temperature limit control.* (Units designed to burn heavy fuel oil.) A safety shutdown must be initiated by lowering the fuel oil temperature below the designed temperature. System shutdown and the need for manual