

§ 62.35-40 Fuel systems.

(a) *Level alarms.* Where high or low fuel tank level alarms are required, they must be located to allow the operator adequate time to prevent an unsafe condition.

(b) *Coal fuels.* (1) Controls and instrumentation for coal systems require special consideration by the Commandant (G-MSE).

(2) Interlocks must be provided to ensure a safe transfer of machinery operation from one fuel to another.

(c) *Automatic fuel heating.* Automatic fuel heating arrangements must meet section 41.78.1 of the American Bureau of Shipping's "Rules for Building and Classing Steel Vessels."

(d) *Overflow prevention.* Fuel oil day tanks, settlers, and similar fuel oil service tanks that are filled automatically or by remote control must be provided with a high level alarm that annunciates in the machinery spaces and either an automatic safety trip control or an overflow arrangement.

[CGD 81-030, 53 FR 17838, May 18, 1988, as amended by CGD 95-072, 60 FR 50463, Sept. 29, 1995; CGD 96-041, 61 FR 50728, Sept. 27, 1996]

§ 62.35-50 Tabulated monitoring and safety control requirements for specific systems.

The minimum instrumentation, alarms, and safety controls required for specific types of systems are listed in Table 62.35-50.

TABLE 62.35-50—MINIMUM SYSTEM MONITORING AND SAFETY CONTROL REQUIREMENTS FOR SPECIFIC SYSTEMS (NOTE 1)

System	Service	Instrumentation	Alarm	Safety control	Notes
Main (Propulsion) boiler	(1)	(1)	(1) .....	.....	(2)
	Supply casing and uptakes.		Fire.		
	Burner flame	Status	Failure	Burner auto trip	(3)
	Burner seating		Failure .....	.....ditto	(3)
	Trial for ignition	Status	Failure .....	.....ditto	
	Control power	Available (pressure)	Failure (low) .....	.....ditto	(3)
				Manual trip	(3)
	Burner valve	Open/closed.			
Low fire interlock	Status.				
Program control interlock.	Status.				
Main (Propulsion steam) turbine.	(2)	(2)	(2) .....	.....	(4, 5)
				Manual trip.	
Main propulsion, diesel	(1)	(1)	(1) .....	.....	(4, 5)
				Manual trip.	
Main propulsion, remote control.			Failure .....	.....ditto.	
			Activated.		
	Starting power	Pressure (voltage)	Low	Limit	(2)
	Location in control	Status	Override .....	.....	(6)
Main propulsion, electric	Shaft speed/direction/pitch.	(3)	(3)	(3).	
	Clutch fluid	Pressure	Low.		
	(4)	(4)	(4)	(4)	(7)
	Stern tube oil tank level.		Low.		
Main propulsion, shafting.	Line shaft bearing	Temperature	High.		
		Forced lubrication	Low.		
Main propulsion, controllable pitch propeller.	Hydraulic oil	Pressure	High, Low.		
		Temperature	High.		
Generators	Ship service	(1)	(1).		
		Starting pressure/voltage.	Low.		
			Tripped.		
	Emergency	(5)	(5)	(5).	
Turbogenerator	(1,6)	(1,6)	(1,6)	(6).	
				Manual trip.	
Diesel	(1,7)	(1,7)	(1,7)	(7)	(5)
				Manual trip.	
Auxiliary boiler	Run	Trip			(12)
Gas turbine	(8)	(8)	(8)	(8)	(5)

TABLE 62.35-50—MINIMUM SYSTEM MONITORING AND SAFETY CONTROL REQUIREMENTS FOR SPECIFIC SYSTEMS (NOTE 1)—Continued

System	Service	Instrumentation	Alarm	Safety control	Notes
Engines and turbines	Jacking/turning gear	Engaged .....	.....	.....	(8)
Fuel oil	(⁹)	(⁹)	(⁹) .....	.....
	Remote/auto fill level	.....	High	Auto trip or overflow arrangement.	
	Hi. press. leakage level.	.....	High.		
Bilge	Pump remote control	Run.			
	Pump auto control	Run	Excessive operations.		
	Level .....	.....	High/location.		
Machinery space CL.3 W.T. doors.		Open/closed.			
Fire detection	Machinery spaces ....	.....	Space on fire .....	.....	(9)
Fire main		Pressure	Low.		
Personnel	Deadman .....	.....	Fail to acknowledge	.....	(10)
General, control and alarm systems.	Power supply	Available (pressure)	Failure (low).		
	System function .....	.....	Failure .....	.....	(11)
	Console air conditioning.	.....	Failure.		
	Built in test equipment.	Active.			
	Sequential interlock ..	Activated.			
	Safety control .....	.....	Activated	Auto trip/limit	(11)
Redundant auxiliary system, power supply.		Status	Auto transfer.		

¹ See ABS Table 41.1.
² See ABS Table 41.1, except Shaft Rollover.
³ See § 113.37 of this chapter.
⁴ See subparts 111.33 and 111.35 of this chapter.
⁵ See subparts 112.45 and 112.50 of this chapter.
⁶ See § 111.12-1(c) of this chapter.
⁷ See § 111.12-1 (b), (c) of this chapter.
⁸ See § 58.10-15(g) of this chapter.
⁹ See ABS Table 41.1, "Additional Services."

NOTES ON TABLE 62.35-50:

- The monitoring and controls listed in this table are applicable if the system listed is provided or required. References to ABS Table 41.1 apply to the "Operation," "Display," "Alarm," and "Notes" 1 through 12, except the reference to ACCU in Note 11.
- Safety limit controls must be provided in navigating bridge primary propulsion control systems. See § 62.35-5(c).
- Safety trip controls and alarms must be provided for all main boilers, regardless of mode of operation. See § 62.35-20(a).
- Loss of forced lubrication safety trip controls must be provided, as applicable.
- Override of overspeed and loss of forced lubrication pressure safety trip controls must not be provided. See § 62.35-5(e)(2).
- Transfer interlocks must be provided.
- Semiconductor controlled rectifiers must have current limit controls.
- Interlocks must be provided. See § 62.25-5(a).
- See subparts 113.10, 161.002, and fire protection requirements of the applicable sub-chapters. The use of thermal detectors alone is subject to special consideration by the Commandant (G-MSE). Flame detectors may only be used in conjunction with smoke or heat detectors.

- See § 62.50-20(b)(1).
- Alarms and controls must be failsafe. See § 62.30-1.
- Vital auxiliary boilers only. Also see part 63.

[CGD 81-030, 53 FR 17838, May 18, 1988; 53 FR 19090, May 26, 1988, as amended by USCG-2000-7790, 65 FR 58461, Sept. 29, 2000]

Subpart 62.50—Automated Self-propelled Vessel Manning

§ 62.50-1 General.

(a) Where automated systems are provided to replace specific personnel in the control and observation of the engineering plant and spaces, or reduce overall crew requirements, the arrangements must make sure that under all sailing conditions, including maneuvering, the safety of the vessel is equal to that of the same vessel with the entire plant under fully attended direct manual supervision.