

FIRE PUMPS

Inspection, testing, and maintenance of fire pumps and controllers shall be performed in accordance with the manufacturer's instructions and NFPA 25 (latest edition). The following list highlights minimum requirements for the essential care of fire pumps and controllers. This list, however, is not meant to replace manufacturer's instructions and updated code requirements. This data is based on the 2014 edition.

Note: OFMR shall investigate a flow test pressure drop of more than 5% with respect to the system baseline or the previous year's flow test. OSHEM shall be immediately informed if a drop is discovered, as this represents an emergency situation that could result in insufficient water supply for the facility fire sprinkler systems.

**NFPA 25 Table 8.1.1.2: Summary of Fire Pump
Inspection, Testing, and Maintenance**

ITEM	FREQUENCY	NFPA 25 REFERENCE
<u>Inspection</u>		
Pump house, heating & ventilating louvers	Weekly	8.2.2(1)
Fire pump system	Weekly	8.2.2
<u>Testing</u>		
<i>Pump Operation</i>		
Diesel engine-driven fire pump, no-flow condition (30 minutes)	Weekly	8.3.1
Electric motor-driven fire pump, no-flow condition (10 minutes)	Weekly/Monthly, See 8.3.1.2	8.3.1.2
Flow condition	Annually	8.3.3
Fire pump alarm signals	Annually	8.3.3.5
<u>Maintenance</u>		
Hydraulic	Annually	8.5
Mechanical transmission	Annually	8.5
Electrical System	Varies	8.5
Controller, various components	Varies	8.5
Motor	Varies	8.5
Diesel engine system, various components	Varies	8.5

**NFPA 25 Table 8.1.2: Alternative Fire Pump
Inspection, Testing, and Maintenance Procedures**

ITEM	FREQUENCY	ACTIVITY
<u>Pump System</u>		
Pump bearings	Annually	Inspect
Lubricate pump bearings	As needed	Change
Inspect pump shaft end play	Annually	Inspect
Inspect accuracy of pressure gauges and sensors	Annually (replace or recalibrate when 5% out of calibration)	Inspect/Change
Inspect pump coupling alignment	Annually	Inspect
Wet pit suction screens	After each pump operation	Inspect/Clean
<u>Mechanical Transmission</u>		
Lubricate coupling	Annually	Change
Lubricate right-angle gear drive	Annually	Change
<u>Electrical System</u>		
Exercise isolating switch and circuit breaker	Monthly	Test
Trip circuit breaker (if mechanism provided)	Annually	Test
Operate manual starting means (electrical)	Semiannually	Test
Inspect and operate emergency manual starting means (without power)	Annually	Inspect/Test
Tighten electrical connections as necessary	Annually	Inspect
Lubricate mechanical moving parts (excluding starters and relays)	Annually	Inspect
Calibrate pressure switch settings	Annually	Inspect
Grease motor bearings	Annually//Annually or as needed	Inspect//Change
Voltmeter and ammeter for accuracy (5%)	Annually	Inspect
Any corrosion on printed circuit boards (PCBs)	Annually	Inspect

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ITEM	FREQUENCY	ACTIVITY
Any cracked cable/wire insulation	Annually	Inspect
Any leaks in plumbing parts	Annually	Inspect
Any signs of water on electrical parts	Annually	Inspect
<u>Diesel Engine System</u>		
<i>Fuel</i>		
Tank level	Weekly	Inspect
Tank float switch	Weekly	Inspect/Test
Solenoid valve operation	Weekly	Inspect/Test
Strainer, filter, or dirt leg, or combination thereof	Quarterly	Clean
Water and foreign material in tank	Annually	Clean
Water in system	Weekly	Inspect/Clean
Flexible hoses and connectors	Weekly	Inspect
Tank vents and overflow piping unobstructed	Annually	Inspect/Test
Piping	Annually	Inspect
<i>Lubrication System</i>		
Oil level	Weekly	Inspect
Oil change	50 hours or annually	Change
Oil filter(s)	50 hours or annually	Change
Lube oil heater	Weekly	Inspect
Crankcase breather	Quarterly	Inspect/Change/Clean
<i>Cooling System</i>		
Level	Weekly	Inspect
Antifreeze protection level	Semiannually	Test
Antifreeze	Annually	Inspect
Adequate cooling water to heat exchanger	Weekly	Inspect
Rod out heat exchanger	Annually	Clean
Water pump(s)	Weekly	Inspect

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ITEM	FREQUENCY	ACTIVITY
Condition of flexible hoses and connections	Weekly	Inspect
Jacket water heater	Weekly	Inspect
Inspect duct work, clean louvers (combustion air)	Annually	Inspect/Change
Water strainer	Quarterly	Clean
<i>Exhaust System</i>		
Leakage	Weekly	Inspect
Drain condensate trap	Weekly	Inspect
Insulation and fire hazards	Quarterly	Inspect
Excessive back pressure	Annually	Test
Exhaust system hangers and supports	Annually	Inspect
Flexible exhaust section	Semiannually	Inspect
<i>Battery System</i>		
Electrolyte level	Weekly	Inspect
Terminals clean and tight	Quarterly	Inspect
Case exterior clean and dry	Monthly	Inspect
Specific gravity or state of charge	Monthly	Test
Charger and charge rate	Monthly	Inspect
Equalize charge	Monthly	Inspect
Clean terminals	Annually	Clean
Cranking voltage exceeds 9 volts on a 12 volt system or 18 volts on a 24 volt system	Weekly	Inspect
<i>Electrical System</i>		
General inspection	Weekly	Inspect
Tighten control and power wiring connections	Annually	Inspect
Wire chafing where subject to movement	Quarterly	Inspect

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ITEM	FREQUENCY	ACTIVITY
Operation of safeties and alarms	Semiannually	Inspect/Test
Boxes, panels, and cabinets	Semiannually	Clean
Circuit breakers or fuses	Monthly//Biennially	Inspect//Change
Voltmeter and ammeter for accuracy (5%)	Annually	Inspect
Any corrosion on printed circuit boards (PCBs)	Annually	Inspect
Any cracked cable/wire insulation	Annually	Inspect
Any leaks in plumbing parts	Annually	Inspect
Any signs of water on electrical parts	Annually	Inspect

**NFPA 25 Table 13.1.1.2: Summary of Valves, Valve Components, and Trim
Inspection, Testing, and Maintenance**

ITEM	FREQUENCY	NFPA 25 REFERENCE
<u>Inspection</u>		
<i>Fire Pumps</i>		
Casing relief valves	Weekly	13.5.7.1, 13.5.7.1.1
Pressure-relief valves	Weekly	13.5.7.2, 13.5.7.2.1