

NFPA 25

Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems

2002 Edition



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An International Codes and Standards Organization

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8.2.2* The pertinent visual observations specified in the following checklists shall be performed weekly:

- (1) Pump house conditions:
 - (a) Heat is adequate, not less than 4.4°C (40°F) [21°C (70°F) for pump room with diesel pumps without engine heaters].
 - (b) Ventilating louvers are free to operate.
- (2) Pump system conditions:
 - (a) Pump suction and discharge and bypass valves are fully open.
 - (b) Piping is free of leaks.
 - (c) Suction line pressure gauge reading is normal.
 - (d) System line pressure gauge reading is normal.
 - (e) Suction reservoir is full.
 - (f) Wet pit suction screens are unobstructed and in place.
- (3) Electrical system conditions:
 - (a) Controller pilot light (power on) is illuminated.
 - (b) Transfer switch normal pilot light is illuminated.
 - (c) Isolating switch is closed — standby (emergency) source.
 - (d) Reverse phase alarm pilot light is off or normal phase rotation pilot light is on.
 - (e) Oil level in vertical motor sight glass is normal.
- (4) Diesel engine system conditions:
 - (a) Fuel tank is two-thirds full.
 - (b) Controller selector switch is in auto position.
 - (c) Batteries' (2) voltage readings are normal.
 - (d) Batteries' (2) charging current readings are normal.
 - (e) Batteries' (2) pilot lights are on or battery failure (2) pilot lights are off.
 - (f) All alarm pilot lights are off.
 - (g) Engine running time meter is reading.
 - (h) Oil level in right angle gear drive is normal.
 - (i) Crankcase oil level is normal.
 - (j) Cooling water level is normal.
 - (k) Electrolyte level in batteries is normal.
 - (l) Battery terminals are free from corrosion.
 - (m) Water-jacket heater is operating.
- (5)*Steam system conditions: Steam pressure gauge reading is normal.

8.3* Testing.

8.3.1 A weekly test of fire pump assemblies shall be conducted without flowing water.

8.3.1.1 This test shall be conducted by starting the pump automatically.

8.3.1.2 The electric pump shall run a minimum of 10 minutes.

8.3.1.3 The diesel pump shall run a minimum of 30 minutes.

8.3.1.4 A valve installed to open as a safety feature shall be permitted to discharge water.

8.3.1.5 The automatic weekly test timer shall be permitted to be substituted for the starting procedure.

8.3.2 Weekly Tests.

8.3.2.1* Qualified operating personnel shall be in attendance during the weekly pump operation.

8.3.2.2 The pertinent visual observations or adjustments specified in the following checklists shall be conducted while the pump is running:

- (1) Pump system procedure:
 - (a) Record the system suction and discharge pressure gauge readings
 - (b) Check the pump packing glands for slight discharge
 - (c) Adjust gland nuts if necessary
 - (d) Check for unusual noise or vibration
 - (e) Check packing boxes, bearings, or pump casing for overheating
 - (f) Record the pump starting pressure
- (2) Electrical system procedure:
 - (a) Observe the time for motor to accelerate to full speed
 - (b) Record the time controller is on first step (for reduced voltage or reduced current starting)
 - (c) Record the time pump runs after starting (for automatic stop controllers)
- (3) Diesel engine system procedure:
 - (a) Observe the time for engine to crank
 - (b) Observe the time for engine to reach running speed
 - (c) Observe the engine oil pressure gauge, speed indicator, water, and oil temperature indicators periodically while engine is running
 - (d) Record any abnormalities
 - (e) Check the heat exchanger for cooling water flow
- (4) Steam system procedure:
 - (a) Record the steam pressure gauge reading
 - (b) Observe the time for turbine to reach running speed

8.3.3 Annual Tests.

8.3.3.1 An annual test of each pump assembly shall be conducted under minimum, rated, and peak flows of the fire pump by controlling the quantity of water discharged through approved test devices.

8.3.3.1.1* If available suction supplies do not allow flowing of 150 percent of the rated pump capacity, the fire pump shall be permitted to operate at maximum allowable discharge.

8.3.3.1.2* This test shall be conducted as described in 8.3.3.1.2.1, 8.3.3.1.2.2, or 8.3.3.1.2.3.

8.3.3.1.2.1 Use of the Pump Discharge Via the Hose Streams. Pump suction and discharge pressures and the flow measurements of each hose stream shall determine the total pump output. Care shall be taken to prevent water damage by verifying there is adequate drainage for the high-pressure water discharge from hoses.

8.3.3.1.2.2 Use of the Pump Discharge Via the Bypass Flowmeter to Drain or Suction the Reservoir. Pump suction and discharge pressures and the flowmeter measurements shall determine the total pump output.

8.3.3.1.2.3 Use of the Pump Discharge Via the Bypass Flowmeter to Pump Suction (Closed-Loop Metering). Pump suction and discharge pressures and the flowmeter measurements shall determine the total pump output.

8.3.3.1.3 Where the annual test is conducted periodically in accordance with 8.3.3.1.2.3, a test shall be conducted every 3 years in accordance with 8.3.3.1.2.1 or 8.3.3.1.2.2 in lieu of the method described in 8.3.3.1.2.3.

8.3.3.1.4 Where 8.3.3.1.2.2 or 8.3.3.1.2.3 is used, the flow meter shall be adjusted immediately prior to conducting the test in accordance with the manufacturer's instructions. If the test results are not consistent with the previous annual test, 8.3.3.1.2.1 shall be used. If testing in accordance with