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# Guidelines for earning IACET CEUs

- Attendee must register/sign-in with all required information.
- Attendee must attend the entire online session (monitored by polling and the host).
- Attendee must actively participate in discussion via polling and chat function.
- A passing score of 70% on the final assessment (within 24 hours).
- Successful completion will earn attendee 0.1 CEU









# Objectives

- Identify the NFPA standard used for inspection, testing, and maintenance of water-based fire protection systems.
- Summarize and locate the requirements for inspection, testing, and maintenance of dry sprinkler systems using the appropriate NFPA standard.
- Identify common hardware used in dry sprinkler systems.

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	Table 13.1.1.2 Summary of Valves, Valve   Maintenance Paintenance			
	Item	Frequency	Reference	=
	Inspection Alarm Valves			_
	Exterior	Quarterly	13.4.1.1	
	Interior	5 years	13.4.1.2	
	Strainers, filters, orifices	5 years	13.4.1.2	
	Backflow Prevention Assemblies			
	Reduced pressure	Weekly	13.7.1	
	Reduced-pressure detectors	Weekly	13.7.1	
	Interior	5 years	13.7.1.3	
	Check Valves	-		
	Interior	5 years	13.4.2.1	
	Control Valves	T.T. 11	10001	
	All valves except locked or supervised	Weekly	13.3.2.1	
	Locked or supervised	Overterly	13.3.2.1.1	
	Electrically supervised	Quarterly	13.3.2.1.2	
	Dry Fipe values/			
	Enclosure (during cold weather)		Chapter 4	
	Enclosure (during cold weather)	Monthly	184519	
	Interior	Annually	134513	
	Strainers filters orifices	5 years	134514	
	Low temperature alarm	Annually	Chapter 4	
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Deluge Valves			
Enclosure (during cold weather)	Daily/weekly	Chapter 4	
Exterior	Monthly	13.4.4.1.1	
Interior	Annually/5 years	13.4.4.1.2	
Strainers, filters, orifices	5 years	13.4.4.1.3	
Fire Department Connections	Quarterly	13.8.1	
Gauges	Monthly/quarterly	13.2.5	
Hose Valves	Quarterly	13.6.1	
Preaction Valves	~		
Enclosure (during cold weather)		Chapter 4	
Exterior	Monthly	13.4.3.1.1	
Interior	Annually/5 years	13.4.3.1.2	
Strainers, filters, orifices	5 years	13.4.3.1.3	
Pressure-Regulating and Relief Valves			
Master pressure-regulating	Weekly	13.5.4.1	
Sprinkler system pressure-reducing	Quarterly	13.5.1.1	
Hose connection pressure-regulating	Annually	13.5.2.1	
Hose rack pressure-regulating	Annually	13.5.3.1	
Fire pump circulation relief	With no flow test	13.5.6.1	
Fire pump main pressure-relief	With fire pump test	13.5.6.2.1	
Valve Supervisory Signal Initiating Device	Quarterly	13.3.2.1.3	
Supervisory Signal Devices (except valve	Quarterly	13.2.6.1	
supervisory switches)			

#### Testing Table 13.1.1.2 Continued Reference Frequency Item Dry Pipe Valves/ Quick-Opening Devices Air leakage Priming water Low air pressure alarm Quick-opening devices Trip test 13.4.5.2.913.4.5.2.113.4.5.2.613.4.5.2.413.4.5.2.213.4.5.2.2.213.4.5.2.2.213.2.5.213.2.5.23 years Quarterly Annually Quarterly Trip test Full-flow trip test Annually Imp test Full-flow trip test Gauges Main Drains Praacian Valves Priming water Low air pressure alarms Trip test Air leakage Low temperature alarm Pressure-Regulating and Relief Valves Master pressure-regulating Sprinkler systems pressure-regulating Hose connection pressure-regulating Hose consection pressure-regulating Fire pump circulation relief Fire pump pressure-relief valves Masterflow Alarms Supervisory Signal Devices (except valve supervisory switches) 3 years 5 years Annually/quarterly 13.2.3Quarterly 13.4.3.2.1 Quarterly Annually/3 years 13.4.3.2.11 13.4.3.2.2 and 13.4.3.2.3 3 years Annually 134326 13.4.3.2.12 13.5.4.2 and 13.5.4.3 13.5.1.3 and 13.5.1.2 13.5.2.3 and 13.5.2.2 13.5.3.3 and 13.5.3.2 13.5.6.1.2 13.5.6.2.2 13.6.2 Quarterly/annually Annually/5 years Annually/5 years Annually/5 years With churn test With fire pump test Annually/3 years Quarterly/semiannually Annually 13.2.413.2.6.2 Inspection, Testing, and Maintenance of Dry Systems 11 Johnson Controls -

Mainte	nance			
	Maintenance	D. C.	10 4 1 9	
	Alarm valves Backflow Prevention Assemblies	Per manufacturer	13.4.1.5	
	Check Valves	Per manufacturer	13.4.2.2	
	Control Valves (outside screw and yoke)	Annually	13.3.4	
	Dry Pipe Valves/	Annually	13.4.5.3	
	Quick-Opening Devices	7		
	Hose Valves	As needed	13.6.3	
	Preaction Valves	Annually/5 years	13.4.3.3	
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# **General Provisions**

- The property owner or designated representative shall have manufacturers' literature available to provide specific instructions for inspecting, testing, and maintaining the valves and associated equipment.
- All system valves shall be protected from physical damage and shall be accessible.



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## **General Provisions**

• A main drain test shall be conducted annually for each water supply lead-in to a building water-based fire protection system to determine whether there has been a change in the condition of the water supply.





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# **General Provisions**

- When there is a 10 percent reduction in full flow pressure when compared to the original acceptance test or previously performed tests, the cause of the reduction shall be identified and corrected if necessary.
- Where other sections of this standard have different frequency requirements for specific gauges, those requirements shall be used.



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- A control valve is a valve controlling flow to water-based fire protection systems.
- Each control valve shall be identified and have a sign indicating the system or portion of the system it controls.
- Systems that have more than one control valve that must be closed to work on a system shall have a sign on each affected valve referring to the existence and location of other valves.



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# **Control Valves**

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 Normally closed valves shall be secured by means of a seal or shall be electrically supervised in accordance with the applicable NFPA standard.

• Sealing or electrical supervision shall not be required for hose valves.

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- After any alterations or repairs, an inspection shall be made by the property owner or designated representative to ensure that the system is:
  - In service

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- All valves are in the normal position
- Properly sealed, locked, or supervised



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- Each control valve shall be operated annually through its full range and returned to its normal position.
- Post indicator valves shall be opened until spring or torsion is felt in the rod, indicating that the rod has not become detached from the valve.
- This test shall be conducted every time the valve is closed.



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- Valve supervisory switches shall be tested semiannually.
- A distinctive signal shall indicate movement from the valve's normal position during either:
  - · First two revolutions of a hand wheel

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• When stem of the valve has moved one-fifth of the distance from its normal position.



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# Poll Question #2

What is the permissible inspection frequency for control valves that are electrically supervised?

- A. Monthly
- B. Weekly
- C. Quarterly
- D. Annually

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#### **Dry Pipe Valves** Valve enclosures shall be inspected during cold °C °F weather for its ability to maintain a minimum 120 temperature of at least 40°F (4°C). 40 100 30 80 Daily 20 60 Weekly, when valve enclosures are equipped with 10 40 low temperature alarms 0 20 10 20 Low temperature alarms, if installed in valve enclosures, shall be inspected annually at the 30 20 beginning of the heating season. Johnson Controls 33 tion, Testing, and Maintenance of Dry Syste











# **Dry Pipe Valves**

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- The dry pipe valve shall be externally inspected monthly to verify the following:
  - (1) The valve is free of physical damage.
  - (2) All trim valves are in the appropriate open or closed position.
  - (3) The intermediate chamber is not leaking.

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# **Dry Pipe Valves**

- Every 3 years and whenever the system is altered, the dry pipe valve shall be trip tested with the control valve fully open and the quick-opening device, if provided, in service.
- During those years when full flow testing in is not required, each dry pipe valve shall be trip tested with the control valve partially open.

















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