
Commercial Property Irrigation System Spring Startup PM

1.0 Maintenance Objective & Frequency

The objective of this procedure is to safely recommission the commercial irrigation system after winter shutdown. This includes pressurizing the system, inspecting all components for freeze damage, testing backflow prevention devices, and verifying proper zone operation. Performing this startup correctly prevents costly water damage, ensures uniform coverage, and maintains compliance with local backflow regulations. This procedure is performed annually in the spring when ambient temperatures are consistently above freezing.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** Disconnect power to the irrigation controller at the breaker panel. Apply personal lock and tag.
- **Water Supply Isolation:** Close the main shutoff valve upstream of the backflow preventer. Verify no residual pressure by opening a downstream test cock.
- **Pneumatic/Hydraulic Hazard:** System may contain trapped air or water under pressure. Slowly open valves to avoid water hammer.
- **PPE:** Safety glasses, waterproof gloves, and steel-toed boots required. Hearing protection when operating high-pressure test equipment.

3.0 Required Tools, Parts & Lubricants

- Backflow preventer test kit (certified gauge set)
- Adjustable wrench (10-inch)
- Flathead and Phillips screwdrivers
- Multimeter (for controller voltage check)
- Irrigation valve key (for manual valve operation)
- Replacement O-rings and seals for backflow preventer (size as per manufacturer)
- Silicone-based lubricant (food-grade for potable water systems)
- Teflon tape (for threaded connections)
- Spare sprinkler heads and nozzles (assorted)
- Bucket and rags for spill containment

4.0 Step-by-Step Maintenance Procedure

1. Verify that all manual drain valves and zone isolation valves are in the closed position. Inspect all exposed piping, valves, and backflow preventer for visible freeze damage, cracks, or loose fittings.
2. Open the main shutoff valve slowly to pressurize the system. Monitor for leaks at all joints and the backflow preventer. If a leak is detected, close the valve and repair before proceeding.

3. Perform a backflow preventer test using a certified test kit. Record the pressure differential across each check valve. Ensure readings are within the manufacturer's specified range (typically 1.0-2.0 psi for reduced pressure zone devices). If out of range, rebuild the assembly with new seals and O-rings.
4. Restore power to the irrigation controller. Verify the controller display is operational and the date/time are set correctly. Check that all zone programs are configured per the property schedule.
5. Manually activate each zone from the controller. Walk the zone to confirm all sprinkler heads pop up fully and rotate properly. Note any heads that are stuck, broken, or misaligned.
6. For each zone, inspect the spray pattern. Adjust nozzle arcs and radii using the manufacturer's adjustment tool. Replace any damaged or missing nozzles. Ensure no water is spraying onto buildings, walkways, or roadways.
7. Check for dry spots or pooling water that indicate clogged nozzles or broken pipes. If pooling occurs, mark the area for excavation and repair. If a head is not spraying, clean the filter screen and flush the line by running the zone for 30 seconds with the head removed.
8. Inspect the rain/freeze sensor (if equipped). Clean the sensor disc and verify it interrupts the controller signal when wet. Test by simulating rain (spray with water) and confirming the controller displays a sensor shutoff.
9. Lubricate all manual ball valves and gate valves with silicone lubricant. Cycle each valve fully open and closed to ensure smooth operation.
10. Record the mainline pressure reading from the pressure gauge downstream of the backflow preventer. Normal operating pressure should be between 40-80 psi. If pressure is low, check for a partially closed valve or system leak.

5.0 Verification & Return to Service

1. Run a full automatic cycle of all zones from the controller. Confirm each zone starts and stops on schedule without leaks or malfunctions.
2. Verify that the backflow preventer test report is completed and filed per local regulatory requirements. Attach the test tag to the device.
3. Document all repairs, replacements, and adjustments in the maintenance log. Update the controller program with any changes to run times or zone configurations.
4. Sign off on the PM work order in ServiceGrid, noting the date, time, and any follow-up actions required (e.g., pipe repair, head replacement).

Regulatory Disclaimer: This document is a generic maintenance template provided for educational and informational purposes only. It does not constitute professional engineering or reliability advice. The end-user assumes all liability for validating all step sequences, torque specs, and LOTO protocols against specific machinery OEM manuals before deployment to a live production floor.