Commercial Facility Winterization and Hose Bib Drain Down Procedure

1.0 Maintenance Objective & Frequency

The objective of this procedure is to prevent freeze damage to exterior hose bibs, interior shut-off valves, and connected piping systems in commercial facilities. This PM ensures all water is evacuated from exposed lines, valves are closed and drained, and backflow preventers are protected. This procedure must be performed annually before the first forecasted freeze (typically October-November in Canadian climates) and reversed in spring.

2.0 Lockout/Tagout (LOTO) & Safety

- Water Isolation: Locate and tag the main water supply shut-off valve for the facility or zone being winterized. Verify shut-off by opening a downstream drain or hose bib to confirm no flow.
- Electrical Isolation: If the facility has heat trace cables on exposed pipes, disconnect power at the breaker panel and apply personal lockout tagout. Verify zero voltage with a multimeter.
- Pneumatic/Hydraulic Isolation: Not applicable for standard hose bib winterization. If compressed air is used for blowout, ensure air supply is isolated and bled down before connecting.
- PPE Requirements: Safety glasses, cut-resistant gloves, rubber boots (if standing water present), and insulated work gloves for outdoor work in cold conditions.

3.0 Required Tools, Parts & Lubricants

- Adjustable wrench (10-inch) or socket set (typically 9/16 or 5/8 inch for hose bib nuts)
- Flathead and Phillips screwdrivers (for access panel screws)
- Bucket or large container (5-gallon capacity) to catch residual water
- Shop vacuum (wet/dry) for water removal from low points
- Compressed air blowout kit (with quick-connect fitting and pressure regulator set to 30-50 psi max)
- Propylene glycol antifreeze (non-toxic, food-grade if applicable) for P-traps and floor drains
- Heat trace cable (if replacing or repairing existing) and electrical tape
- Pipe insulation foam (closed-cell, R-3.5 or higher) and zip ties
- Teflon tape (for reassembling hose bib threads)
- Multimeter (for verifying heat trace power isolation)
- Marker and tags for labeling shut-off valves

4.0 Step-by-Step Maintenance Procedure

1. Locate the main water shut-off valve for the facility or zone. Close the valve fully (turn clockwise until snug, do not overtighten). Tag the valve with a 'Closed - Winterization' tag and record the valve position in the maintenance log.
2. Open all exterior hose bibs (sillcocks) fully to allow water to drain. Leave them open during the entire procedure to prevent trapped water from freezing.

3. Locate the interior shut-off valves for each hose bib (typically in a mechanical room, crawlspace, or basement). Close each valve fully clockwise. Tag each valve with the corresponding hose bib location.

4. Open the hose bib drain cap or petcock (if equipped) to allow residual water to drain into a bucket. If no drain cap, use a shop vacuum to suck water from the hose bib opening. Continue until no water flows.

5. For hose bibs with a backflow preventer (vacuum breaker), unscrew the brass cap and remove the internal spring and rubber seal. Clean any debris and store the components in a labeled bag. Leave the cap loosely threaded to allow drainage.

6. Using compressed air (max 50 psi), blow out the hose bib line from the interior shut-off valve to the exterior bib. Attach the blowout kit to the interior drain port or remove the valve stem and blow through the valve body. Blow for 10 seconds or until no moisture exits the exterior bib.

7. Repeat steps 2 through 6 for every exterior hose bib on the facility. Document each bib location and confirm drainage on a checklist.

8. Pour 1-2 cups of propylene glycol antifreeze into each floor drain and P-trap in unheated areas (garages, loading docks, exterior stairwells). This prevents trap water from freezing and cracking the drain line.

9. Inspect all exposed pipes in unheated spaces (attics, crawlspaces, exterior walls) for existing insulation. Replace any damaged or missing foam insulation. Secure with zip ties every 12 inches. Ensure insulation is dry before installation.

10. If heat trace cables are present, verify they are operational after power is restored (see Section 5.0). Check for exposed wiring, corrosion, or broken connections. Replace any damaged sections per manufacturer instructions.

11. Close and secure all exterior hose bib access panels. Leave hose bibs in the open position (slightly cracked) to allow any condensation to drain. Do not attach garden hoses.

12. Update the facility winterization log with date, technician name, list of bibs serviced, and any anomalies found (e.g., leaking valves, missing insulation). Attach a 'Winterized' tag to the main shut-off valve.

5.0 Verification & Return to Service

1. Restore power to heat trace circuits (if applicable) at the breaker panel. Verify each circuit draws current using a clamp meter (typical draw: 0.5-2 amps per 100 feet of cable). Confirm the cable feels warm to the touch after 10 minutes.

2. Perform a visual inspection of all winterized hose bibs. Confirm no water is leaking from the exterior bib or interior shut-off valve. Check that drain caps are not cross-threaded.

3. If the facility has an automatic sprinkler system, ensure the backflow preventer is drained and the system is blown out per the irrigation winterization SOP (separate procedure).

4. Document the completion in ServiceGrid: log the PM as 'Complete', attach the winterization checklist, and note any follow-up items (e.g., replace heat trace cable on north wall).

5. In spring (typically April-May), reverse the procedure: open interior shut-off valves, close hose bibs, reinstall backflow preventer components, and restore water supply. Test for leaks at full pressure.