

# Preparing Irrigation Systems for Winter

The items requiring the highest maintenance on an irrigation system are:

1. Pump Station
2. Water Source
3. Lightning Protection
4. Automatic Controls
5. Turf Rotors

**The pump station** (the heart of your system) is usually the most ignored item. This is understandable because it is the most highly technical piece of equipment.

Eighty percent of pump station damage is due to your water source, and that is why I have given the source its own heading (#2, below). If closed coupled centrifugal pumps are maintained, the suction lift through the foot valve and intake line will give the most problems. Close examination is necessary, and if wear is noticed in the foot valve, screen or seal assembly, replacement may be necessary.

Remember! Replacement parts may be available for the foot valve, but it usually takes four to six weeks to get these parts from your supply company.

The second problem item in closed coupled pump stations and the first problem item in a turbine pump station is the main control valve.

**The pilot control orifice** on the main control valve can become clogged at the drop of a hat if not properly screened.

The past couple of years, pilot flush screen assemblies have been introduced to minimize station miscalibration due to clogging. The other items on the pump station usually fall a distant third if maintenance has not been ignored.

The pump motors will need to be periodically lubricated and if high speed (3,600 rpm) motors are installed, expect to replace the motors every two to three years.

**The pump shaft packing will need to be replaced** at least once a year. Mechanical seals of the pump shafts may have been installed, and, if so, examine excess leakage and adjust or replace if necessary.

The heating and ventilation of the pump station will need evaluation for automation and effectiveness. Proper water drainage for the pump station pad and motor packing will minimize undue moisture damage and control circuitry malfunctioning due to humidity. Painting the inside of the station will minimize air contamination to the electrical circuitry.

The pump station should be inspected by a professional service company. I would recommend a service contract with a pump station firm to do detailed preventive maintenance.

**Water source** preventive maintenance is usually easily done during the winter, but impossible to repair during the watering season. The water source includes three main points:

1. Water quality and quantity
2. Reservoir maintenance
3. Intake structure-screen, wet well intake and wet well

The water quality for golf course irrigation is not likely to improve and most likely will get more difficult to work with

in years to come. Algae strikes fear in all of us, but it is best corrected at the source. Aeration, chemical application and even grass carp have been effective. State and federal control is affecting these approaches and professional advice will be necessary.

The increased demand for better year-round turf has caused the lowering of lake levels. This fluctuation causes suspended particles to infiltrate into the system. Drilling of wells or transfer pumps would be recommended to maintain lake level control.

**Reservoir maintenance should be a yearly project.** The cleaning up of the shore banks and opening of inlets and exits will keep an effective water flow through the reservoir.

The inlets will need to be dredged for silt yearly. This will prevent extensive and expensive dredging if building up occurs.

The inlet screens and wet well must be checked. These screens are usually made of stainless steel, but different grades of stainless are affected differently by toxic water conditions. The intake pipe and wet well will need to be checked for deterioration and repaired. The wet well is also a point for silt accumulation. This can be cleaned by a sludge type pump, rented from any local rental company.

**Lightning** is a fact of life. Some type of protection can minimize damage. Lightning protection can minimize damage. Lightning protection is frequently being updated and manufacturers' recommendations should be observed. Testing of arrestors and ground rod assemblies should be done and repairs made when necessary. The difficulty with lightning damage is that when you think it's repaired, some other damage will be exposed. **DO NOT TAKE LIGHTNING PROTECTION LIGHTLY.**

The irrigation system **automatic controls** maintenance is year-round. During the winter, all control panels should be checked and repaired. The motors, printed circuit boards and wire terminal blocks will show wear first. The irrigation programming will need to be evaluated and adjusted for overwatering and pumping system inefficiencies. If computer controls are used, winter is an excellent time for updates and checking golf cart damage to pedestals and mounting pads. Check field wiring connections and note repaired points.

The **turf rotors** will need to be reviewed in the fall noting the following:

1. Slow opening and closing
2. Weeping
3. Coverage/Application
4. Clogged nozzles
5. Cover and case damage
6. Rotor operated smoothly

After noting the defective rotors, proceed with a rotation repair program. Take ten rotors at a time and replace or repair the rotor. Manufacturing companies usually have repair services if difficult problems occur. Check to see that the rotors are at ground level. Too high will cause mower damage—too low will prevent the open case rotor from working properly.

—Bob Scott, *Irrigation Consultant, Conyers, Georgia*