IRRIGATION SYSTEM DAMAGE DURING A HARD FREEZE

Submitted by Gary Boswell

During the hard freeze in early January 2010, many homeowners experienced breaks in their irrigation systems. Most, if not all, of these breaks occurred when the vacuum breaker (the small domed apparatus on the horizontal section) burst from water freezing in this apparatus, being the weak link of the backflow system. This series of valves and vacuum breaker are all part of the backflow system to prevent irrigation water, considered non-potable, from back flowing and contaminating our drinking water.

Since this was the first experience of this nature to affect the irrigation systems in our Community, and given that the homeowners had not been adequately instructed on methods of preventing this type of failure, the HOA elected to assume responsibility for the necessary repairs. Future repairs to this backflow system will be the responsibility of the homeowner, and these repair costs can run as high as $225 depending upon the extent of the damage.

Be prepared to insulate your backflow system when a freeze is forecast for the area. If the temperature is anticipated to remain below freezing (32°F), especially several degrees below freezing (≤ 28°F), for several hours, then the vacuum breaker should be drained before the insulation is put into place. Follow these simple steps to drain the vacuum breaker and protect the backflow system:

- Insure that your irrigation controller (generally located in the garage) is set to "OFF".
- Close the valve in the vertical line of the backflow system (the vertical line is assumed to be the source water line) – turn the valve until it "snaps" closed and the handle is completely perpendicular to the pipe run.
- Remove the two black rubber threaded plugs and turn the slotted screws on the side by ¼ turn to bleed the vacuum breaker – there will be an initial spurt of water followed by drips – leave the screws in this position so water can bleed out as it freezes.
- Use an insulation wrap or cover, a large towel, old quilt, etc. to provide a 4" thick insulation wrap around the system – duct tape can be used to keep the insulation from blowing off.

You have all seen the advertisement in the Community Newsletter for the backflow system insulation cover from PINKING. A number of our residents, including myself, have ordered these. They are not cheap, but after I saw the quality of the product and the ease with which they can be installed, I felt the cost was justified. Hopefully, they will last several winter seasons, but this is yet to be determined. My plans are to slip the cover over the backflow system, without draining the vacuum breaker, whenever a light freeze (a few hours of 30° - 32° temps) is forecast. When out of town during the winter months or when a hard freeze (several hours of below 30° temps) is forecast, I plan to shut off and drain my system before installing the insulation cover. These are just MY guidelines, and I take NO responsibility for the effectiveness of them in preventing a system failure for anyone else. I firmly believe that the North side of a house gets colder than the other sides, which experience a small amount of radiant heat from the house, so if your system is on a North side, maybe it would be "better safe than sorry" to drain the vacuum breaker and install insulation prior to any predicted freeze.

Also, Mark Kinney of Houston Lawn, our residential lawn care contractor is offering to drain your system and prepared your system for winter for a fee of $25.00.

Last winter, my system was in a grassy part of the yard and weed eaters had stripped the insulation from the bottom +/- 4" of the vertical pipe runs. So, before covering my system, I had to locate some foam tubing insulation and duct tape to cover the exposed pipe. This was not a pleasant experience as it was cold and dark by the time I could correct this situation. As soon as possible, I had the grass removed from around my backflow system and the seven solenoid valves (the round green plastic covers) that control my watering stations and bull rock installed in its place so that weed eaters are no longer used near this area. Many residents already have this system within a flower bed and have never experienced this problem. I suggest that all homeowners do something similar to remove the grass from around this above ground part of the irrigation system.