

Tank inspection means more than looking at paint

Over the last couple of months I have had the opportunity to log quite a few miles getting out and traveling around southeast Kansas. It has been a pleasure to see a lot of familiar faces and to meet quite a few new people as well. In my travels I have debated a topic for this issue of *The Lifeline*. I wanted a topic that would be informative to many systems and perhaps, a subject that is often overlooked or put off. I really expected to write about some obscure facet of operations that most of us would not have thought of in a while. The more I looked and the more I listened,

Bob Kirby
Tech Assistant



the more I realized there was a topic. It was staring down at me as I passed through rural areas. Although my work with systems involves many aspects, there's one issue that is fairly common. Many systems overlook or neglect to perform routine inspection and maintenance of their water storage tanks, towers and/or standpipes.

Town symbols, rural landmarks

The water storage tanks stand like sentinels over the communities they serve. Although these facilities provide service year round, eventually storage tanks will have problems or suffer failure. There is no rattle or weird noise to tell us something is going wrong. Usually we have to notice subtle

signs, either in water quality or by observation, to alert us to any problem. If you are lucky, the problem will be rather minor. If your luck has run out then the problem will be something much worse, usually requiring you to spend a rather handsome sum of money to have the problem corrected.

If you do not have regular inspections or perform regular preventative maintenance then you will not likely be equipped

to handle the steps that need to be taken to have your storage unit off line for extended periods of time. A city in southeast Kansas recently had a situation arise where the ground storage unit suddenly sprang a leak in the bottom. This tank had been in service for decades and had always performed adequately. Due to the number of years it had been since the tank had been taken off line, there was no way to bypass the water around the

Water Tank Inspection Checklist

At a minimum, a good inspection of a water storage tank includes categories that address sanitary conditions, structural and footing conditions, safety and security conditions, coating system conditions and a statement of general details. Examples of items included in these categories would include:

1. Roof access hatches should have watertight covers that overlap the framed opening. Covers should be hinged on one side and have a locking device.
2. Vents should be constructed to prevent entrance of outside water and exclude birds, animals and insects. Vents should be screened. Overflows should not be used as vents.
3. Overflows must be sized to carry more than the highest filling rate of the tank.
4. Hydrants, cleanouts or similar flushing devices must be provided on the piping of all storage facilities. These devices should be located so that they can drain the storage while the facility is isolated from the system.
5. Structural conditions such as condition of anchor bolts, tightness of rods, concrete foundations.
6. Determine the type and general condition of the interior and exterior paint systems.
7. Determine extent, nature and depth of any pitting.
8. Check paint for chalking and blistering.
9. Check all bolts and rivets for corrosion and leaks.
10. All cables and wires to devices should be installed inside conduits and secured to the storage structure.

tank without a significant amount of work. The city had to install a by-pass line and make other adjustments to keep the system in water while the repairs were made. If regular inspections had been made, someone should have noticed that a bypass was needed to ensure good operations in case this take had to be taken off-line. Fortunately this system had the resources available to quickly make the necessary installation and repairs. A smaller system may not have been so fortunate.

There are no set rules or a schedule when inspections should be made. The American Water Work's Association Manual M42 sets industry standards, however, frequency of tank maintenance is something that is unique to each individual system, as each one will have different water quality characteristics and environmental conditions affecting the rate of deterioration of the structure.

Typically an operator who is familiar with the system will have an understanding of when things like an inspection are needed but it should be done at least on a three to five to year time frame. Some systems opt to undergo inspections annually and typically do so by signing a maintenance agreement with a tank and tower maintenance company.

Determine maintenance needs

There are numerous companies that are associate members of your Kansas Rural Water Association available to perform these types of services along with different ways to go about getting prices for the work. When hiring a company to do the work your system may opt to go through a formal bidding process or to simply get price quotes from a number of companies. As with any project, try to identify the scope and details of the work as thoroughly as possible to avoid the unexpected and unforeseen

project costs. When you are looking into a tank that has not seen the light of day in years these cost overruns may prove to be unpreventable. However it is necessary to try and protect the finances of your system.

I encourage cities and RWDs to keep maintenance of their storage tanks in mind regardless of the type or number of units you have. Water storage facilities are a critical asset to your system. Like everything else they need attention because eventually there will be problems.

I'd like to call your attention the KRWA conference set for March 29 - 31. On Tuesday, March 29, there will be a pre-conference session on the topic of storage tank maintenance. Make sure someone from your city or RWD attends that session. Meanwhile, I would encourage you to call KRWA if you would like assistance with your project or have questions. As always we will be more than happy to help out.

D&M / WRETMAN

1501 E. PARK, SUITE A, OLATHE, KS 66061

PH: 913/780-0097

FAX: 913/780-1399

PAUL & DAVID HAWKINS

EULA WHITTAKER

MANUFACTURERS' REPS.

FOR KANSAS:

DFW PLASTICS
ELBI OF AMERICA
ENDOT INDUSTRIES
MAASS MIDWEST
NDS

NORTHERN PIPE PRODUCTS

METER PITS
EXPANSION TANKS
POLY PIPE
PITLESS UNITS, WELL SUPPLIES
FLEXIBLE COUPLINGS, SADDLES
AND CHANNEL DRAIN

PVC PIPE