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March 19, 2008

Raymond Greg
City of Geneseo
600 Main
Geneseo, KS 67444

Dear Raymond,

It was good to meet with you to discuss operational issues. The city's daily chlorine residuals have been averaging 1.8 mg/l free chlorine. Only water from two of the wells is chlorinated; the other two do not. The main well is gas chlorinated and the other has a liquid chlorine application. For this reason the wells must be manually operated, simultaneously, in order to adequately chlorinate the water. The main well is operated from a pressure switch system located at the well. We discussed the benefits of an automated telemetry system. Such a system is much more accurate and keeps the tower level consistent at the desired level and provides better control. A radio-based telemetry system for example, uses a pressure transducer to sense the pressure at the tower which then translates the pressure to an electrical signal that the electronics of the control system can interpret. The signal is then sent by radio to the wells, where a relay is energized to engage the motor starter. The electronic components at the well shut the well off when the demand has been satisfied.

KDHE recommended that the gas chlorination system be isolated from the rest of the well building. This is certainly a good idea to help protect electrical and piping components as chlorine gas is very corrosive. Chlorine gas should not escape into the room but it seems like some does at times no matter how good of a system anyone has. Sometimes it may only be when the bottles are changed but it seems to be enough to cause corrosion.

The lightning arrestor on the north well is a LA 603; this is actually the wrong unit to provide adequate protection. The 603 is a 600-volt unit. This means that a voltage spike voltage above 600 volts is clamped and sent to ground. The LA 603 is designed to be installed on 480-volt systems. Your system is a 240-volt system; the correct unit is a LA 303 which is a 300-volt arrestor and clamps everything above 300 volts. The 600-volt unit would allow too much voltage on a 240-volt system, resulting in irreparable harm to electrical components.

I hope you will be attending the annual conference in Wichita. It is a great place to learn about the water and wastewater industry and a great place to shop for new equipment, tools and get new ideas from other operators.

Sincerely,

Jon Steele
Circuit Rider

C: Carolyn Gustus, Mayor
Vickie Wessel, KDHE