

Chlorine Containment News™

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City Gains Enhanced Chlorine Gas Safety for Two WTP's, by Using Special Chlorine Containment Vessels as Alternative to Scrubbers

Also Gets Special Training Session for Plant Operators



At the new plant, two 1-ton ChlorTainer™ cylinder containment vessels were supplied with loaders, scale systems, and instrumentation. Rollers ease cylinder changing.



Instrumentation on top of the units include a failsafe valve that ties into the chlorine leak detection sensor, so that in the event of an external release, the failsafe valve will close, stopping any external leak.

The utility systems operator for the city of Sartell, MN, who is responsible for the operation of two water treatment plants (WTP's), reports good long-term experience with special chlorine gas secondary containment equipment at both plants, as an alternative to emergency chlorine scrubbers for handling any chlorine gas leakage. He also notes a boost from the manufacturer of the special gas containment vessels, in the recent training of less experienced plant operators in their safe and effective use, toward enhancing water treatment plant safety.

“The chlorine containment units have been awesome; pretty much maintenance-free,” he said. “During the process of designing our new plant, we considered the use of scrubbers for chlorine gas secondary containment, and dismissed them as a nightmare system, based on what we heard about their use in a neighboring city. They reported a very heavy operations and maintenance burden

with them, plus the cost of adding caustic. The containment vessels we installed instead have provided a less-maintenance alternative, which is important to a four-man operating staff for both plants, while being easy to use.”

The ChlorTainer™ cylinder containment vessels were manufactured by TGO Technologies of Santa Rosa, CA, and were supplied with loaders, scale systems, and instrumentation.

At the city’s original, 4-MGD WTP, which opened in 2002, 150-lb. chlorine gas cylinders were used, without secondary containment.

“That worked out alright, except it was a pain to have to change cylinders so often,” he continued. “That was primarily what led us to consider a scrubber system to enhance chlorine gas safety for the new 6-MGD plant that went on line in 2008. But we solved that pain instead, after installing two one-ton secondary containment vessel systems at the new plant, by replacing the use of 150-lb. cylinders with one-ton units at the older plant, and adding the same secondary containment system there as an extra safety feature.”

At both plants, which together serve a population of about 17,000, about 20 lbs./day of chlorine gas is introduced at the clearwells, before finished water goes to the distribution systems. The containment vessels enclose the chlorine gas cylinders, the chlorine transfer hose, and seismic lock-down brackets.

The chlorine transfer hose is attached to the supply valve, pressurized, and tested for any leaks at the hose ends. Then the door is closed, and secured by a clamshell locking mechanism.

When the official passed on some questions from his more recently hired operators to a TGO representative he met at a regional conference, the rep volunteered to arrange a training visit from the manufacturer’s home office.

“They came up about a year ago to refresh us on maintenance protocols, and generally how to take care of the chemical safety equipment,” he recalled. “The operators wanted to know more about the system, and what to look for. Maintenance is pretty much limited to annual replacement of the clamshell door seal, using a special grease. TGO was very willing to help show us anything we needed to know about.”

With any accidental leaks of chlorine kept within the containment vessel, no atmospheric venting is generated. The vessels are ASME-rated pressure tanks, and any leaks are recycled to the injection system at a normal flow rate. A failsafe valve ties into the chlorine leak detection sensor, so that in the event of an external release, the nitrogen failsafe valve will close, stopping any external leak.

In a further commitment to serving the water industry, TGO Technologies, also known by its product name ChlorTainer, is partnering with the American Water Works Association (AWWA) to financially support aspiring civil and environmental engineers and encourage their entry into that industry. For every ChlorTainer unit sold, the company will donate \$1000 toward engineering scholarships. The donation will go to the corresponding AWWA Section scholarship fund for the municipality that purchases the ChlorTainer(s). Further information is available via the AWWA scholarship page.

Further information about ChlorTainer is available from TGO Technologies, www.chlortainer.com, (800) 543-6603, sales@chlortainer.com.

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