JAYTECH INCORPORATED

Jaytech, Inc. E- Newsletter

"A candid conversation about water treatment issues facing today's mechanical engineers."

December 2006 Volume 2006, Number 5

In This Issue

Contact Me At:

mjuhl@jaytech.com

What to Expect from a Steam Boiler with Low Demand

Operating steam boiler plants for domestic heating can be a challenge, as demand is for the most part dictated by the weather. Early winters and Indian Summers can frustrate responsible boiler operators looking to maintain the proper boiler chemistries.

The vast majority of comfort steam boiler systems operate using phosphate or carbonate-cycle programs. Carbonate-cycle water treatment programs generally require the boiler engineers to maintain chemistries such as "P" Alkalinity, "OH" Alkalinity, and a sulfite (SO3) residual. Phosphate programs also require sulfite residuals in addition to phosphate residuals, which are also volatile during low demand or inconsistent operation.

These chemistries in particular, are dramatically affected minute to minute by the load on the boiler. This is to say that the steam generation rate, hours of operation, firing rate of the burner, lead-lag operation, temperature of the return and feed water, as well as a host of other fluctuating factors will maintain an overall low demand on the system and result in artificially low alkalinities, phosphate, and sulfite residuals.

The telltale sign of a steam boiler with low demand is low conductivity. In general, if the conductivity is below 2000mhos, the boiler has not had the opportunity to cycle, as it should. Chemistries tested prior to full cycling should be taken with a grain of salt. Until a steam boiler is fully cycling on a regular basis (generally when the outdoor air temperature is 10-20^{0}F for a few days in a row) the chemical residuals will appear low regardless of the amount of chemical the engineer has applied.

In October/November of each year, it is common to receive phone calls from steam boiler operators saying that they can't achieve the recommended limits on their alkalinity or sulfite residuals regardless of how much chemical they add to their system. Once the cold weather arrives, the chemical residuals skyrocket to a point where they may exceed the recommended limits because the boilers have

Helpful Links

now cycled due to the demand placed on them from the cold weather. More chemical is not always better. The right amount is best.

To avoid this frustration and uncertainty of proper residuals, Jaytech, Inc. recommends a couple of options.

- The addition of start up chemicals (we recommend in our solid form called "sticks") during the initial fill of the boilers will ensure some treatment is in the system initially and a residual will be detected. Simply detecting a residual prior to cycling indicates chemical is in the system which is positive.
- Consider moving from a carbonate cycle program to a nitrite-based program available in our solid line of products as JT-6810. This product is specifically designed for comfort heat applications with low-pressure (<30psi) low make-up (<30%) steam boiler systems. Many of our customers prefer the ease of application as well as the consistency of chemistry in the system not to mention the results!

A basic understanding of how demand affects the boiler chemistries during low demand periods can provide piece of mind.

For more information regarding appropriate chemistry levels in steam boilers, start-up sticks, or nitrate-based steam boiler treatments, please contact your Jaytech, Inc. representative or myself at mjuhl@jaytech.com

Jaytech, Inc. Enjoys a new Corporate Office

Jaytech, Inc. recently moved from its temporary location, which it has occupied for the past two years to a newly remodeled corporate office space in Fridley, MN. The new location is perfectly suited to office our sales, service, and support staff based in the Minneapolis, MN Area. This facility has allowed us to more than double the size of our laboratory, thereby increasing the technical services available to our customers. New spaces were designed to include meeting and training rooms for technical training sessions.

We are enjoying our new facility and appreciate your patience during our moving process!

Updated Web Site!

Take a moment and check out the latest version of the Jaytech web site at www.jaytech.com. You can now access all technical and Material Safety Data Sheets online 24 hours a day. Archive copies of our e-newsletters are available for download. While you're there, take our short water treatment quiz and win a prize!

Jaytech Tip

“Jaytech Tip-1” Be patient when adding chemical to a steam boiler system early in the season. Maintaining the normal limits prior to the boiler cycling will over-shoot the recommended levels once cycling occurs and may lead to priming.

“Jaytech Tip–2” Implementing a nitrite-based steam boiler treatment program will eliminate the need to continuously monitor and adjust sulfite levels which are affected dramatically by early season temperature fluctuations.

Next Issue!

Cost Savings Utilizing Automatic Blowdown Controllers

Have an idea?

If you have an idea or question you would like more information about, send me e-mail at mjuhl@jaytech.com and we’ll answer it! Remember, it must be water treatment related and be of interest to other professionals such as you.

Jaytech, Inc.
1290 Osborne Rd.
Minneapolis, MN 55432
763-795-9331