



WARE

ALL WAYS STEAM

THE GRIME

Winter 2019 Newsletter

The Top 10 Qualities of the Best Boiler Technicians

Guest writer Mike Robertson, "The Boiler Guy Says"

Working with a Boiler Technician can be challenging if you're not a boiler expert yourself.

How do you know if the Tech is doing a good job when you don't understand the project he's working on?

Our friend at The Boiler Guy Says sent us a great article he wrote on what separates the best Boiler Techs from the rest.

In his article, he identifies 10 qualities of a great Boiler Technician. We thought his tips were helpful and wanted to share his wisdom with you. We've adapted his advice for you and provided it here, so you can use it when you work with Boiler Technicians from now on.

Here are the Top 10 Qualities of the Best Boiler Technicians:

1. They answer the call of duty with positive energy and enthusiasm.
2. They are prepared when they show up to a job site.
3. They not only identify the problem, but share that knowledge with the customer, so everyone can be on the same page.
4. They fix the problem quickly and without fanfare. They're professional.
5. They ask to look around the boiler room to get a full picture of the situation.
6. They stay on-site to verify that the repair worked.
7. They clean up the site when they're done working.
8. They clearly communicate how their company can help the customer.
9. They provide a lot of detail in their work order.
10. They follow up with the customer to confirm the boiler is working properly and ask if they can do anything else to help.

Just use these 10 qualities as a filter the next time you work with a Boiler Technician. And if you're looking for one right now...

Feel free to give us a call!

How to Prevent Rust and Scale Build-Up in Your Firetube Boiler

by Keith Jackson



In a perfect world, you would never need to retube a firetube boiler.

But unfortunately, we don't live in a perfect world. Things happen and sometimes, despite your best efforts, you end up in a situation where your boiler needs to be retubed.

**The first question to ask is:
Why do certain boilers need to be retubed?**

It all comes down to one thing:
Water treatment.

The reason firetube boilers need to be retubed is most often something like this:

The facility doesn't treat the water properly before it enters the boiler, so the boiler is using hard water, which contains too much calcium. That means that, as the water boils, the calcium in it hardens and sticks to the boiler's tubes.

If this occurs for too long, the calcium scale on the outside of the tubes insulates them, which means that they can no longer transfer heat.

If left untreated, this can lead to cracks in the metal on the tubes. Eventually, if the cracks get deep enough, the only solution is to replace the tubes entirely.

Another potential problem due to poor water treatment is oxidation, which eventually rusts out the tubes in the boiler. When this happens, they can no longer hold water and will need to be replaced.

The important thing to note is that boiler retubing is not a part of regular maintenance. If your facility treats water properly, the tubes in your firetube boiler should last for many years without needing to be replaced.

So then, how do you make sure you're treating water properly?

The best solution is to hire a water treatment professional to regularly test the chemistry of your feedwater.

Once they know the chemistry of the water, they can recommend solutions to help you properly treat it, so you can avoid rust and scale build-up in your boiler.

Beyond that, you can do two other things to help protect your boiler's tubes from damage:



Learn more on "How to tell if Soot or Scale is in your Boiler - Weekly Boiler Tips"

Continued on page 7

Being Thorough With Your Inspections

By Alex Taylor



When it comes time for an annual boiler inspection, the common practice is to open up the furnace (fire side), water side, and low water cutoffs for inspection. An inspector will look for signs of leaks, cracks, pitting or corrosion, scale formation, excess sludge in the bottom, excess soot on the furnace side, proper operation of safety controls, etc. and they will usually want to perform a hydrostatic pressure test as well. The boiler, however, is not the only part of the system, and while it is down, it is a convenient opportunity to inspect the other equipment inside of the boiler's deaerator or feedwater system, the pumps, motors, and the condition of the primary feedwater piping.

The inside of the deaerator, vented feed tank, or condensate tank should be inspected for signs of pitting or corrosion, sludge buildup in the bottom, or fouling/damage to the water level probes or float assembly. These are usually the easiest problems to identify. Regardless of whether you have a spray head or tray type deaerator, it is a good idea to try to examine those components to make sure they are still in good condition. Likewise, in a vented tank with a steam sparge tube, check the condition of the sparge tube. If the feedwater pumps have been noisier than usual, check the impellers to look for signs of cavitation damage. From the blower motor to the pump motors, it is a good idea to have them all tested periodically. A megohmmeter reading can provide a glimpse into the condition of the motor, especially when it is very near to failing. If the motor is going bad, then this downtime would be most convenient to have it either rebuilt or replaced.

Something that is often neglected during regular inspections is the feedwater piping. Many plants insulate their piping for increased thermal efficiency and to minimize hot surfaces in the boiler room. This is an excellent practice, but as the old saying goes, "out of sight, out of mind." The insulation needs to be removed for periodic inspection, as a small leak in the piping can soak the insulation and cause the piping to oxidize at an accelerate rate, eventually allowing the pipe to burst open. This could potentially require total replacement of large sections of piping if it goes unaddressed long enough. By temporarily removing some insulation to check the condition of the underlying pipe, such critical structural failure can be prevented.

Another item that is often neglected is the combustion air intake system. More specifically, any louvers that allow fresh combustion air to enter the boiler room. If environmental debris, plant growth, fouling from the facility's production byproducts, animal nesting materials, etc. are allowed to impede the louvers (or just the air intake of the blower, if your boiler is equipped with one), then the burner's intake air will be restricted. This can negatively affect the burner's air-to-fuel ratio and impede proper combustion, so the intake air louvers must always be kept clear of any obstructions.

Continued on page 7



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52

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May 12-13, 2020 - Louisville, KY
July 28-29, 2020 - Ashland, KY

201 CLASS 2019 - 2020

January 28-30, 2020 - Louisville, KY
March 10-12, 2020 - Louisville, KY
April 21-23, 2020 - Louisville, KY

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201CLASS - \$1,800.00

Is a three-day program building on the 101 foundation, but adding the full experience of our Louisville Boiler Lab, providing hands-on opportunities on many subjects with our four fully operational lab boilers. Beginners will get the full perspective of an operating system, and even seasoned operators and contractors will gain valuable insight from displays, such as our fully glass piped steam and condensate system demonstrator.

**For Other Classes Offered
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Classes are four hours long

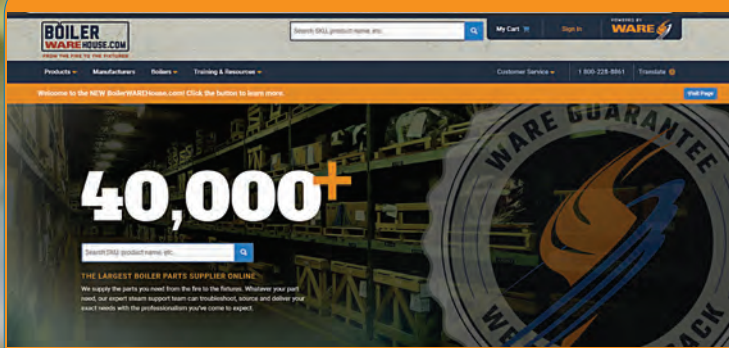
BOILER 202 - Daily Boiler Operations
BOILER 203 - 4 Hour Steam System Basics
BOILER 204 - Safety and Limit Checks
BOILER 205 - Energy Efficiency Options

Classes are three days long

BOILER 301 - Boiler Open/Close
BOILER 302 - Principles of Combustion
BOILER 303 - Hands on Flame Safeguard and Boiler Control Wiring
BOILER 304 - Feedwater and Level Control

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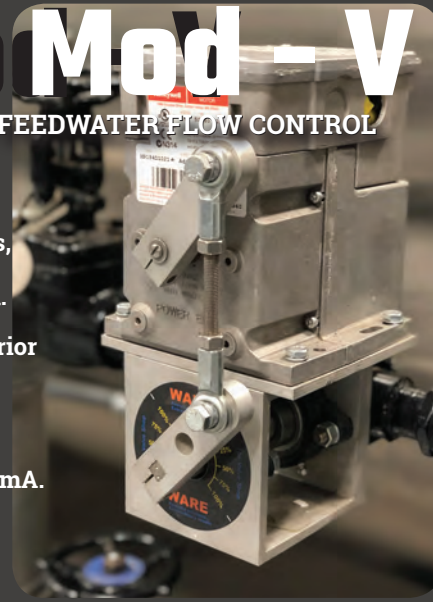
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WAREboilers channel

WATCH - Common Problem fixed for boiler feedwater valves On the Boiling Point

and a **WHOLE LOT MORE**

New website coming soon!



NEW AND USED LIST

ALL EQUIPMENT LISTED IS FOR SALE OR LEASE AND SUBJECT TO AVAILABILITY

Unit	HP/PPH	Year	Manf.	Fuel	Type	PSI	Ctrl.
779	82,500	2013	Victory Energy Limpsfield	(Low NOx) G/#2	Steam	350	IRI
796	82,500	2016	Victory Energy Faber	(Low NOx) G/#2	Steam	350	IRI
797	82,500	2016	Victory Energy Faber	(Low NOx) G/#2	Steam	350	IRI
767	75,000	2011	Victory Energy	(Low NOx) G/#2	Steam/SH	750/750	IRI
747	75,000	2000	B&W	(Low NOx) G/#2	Steam/SH	750/750	IRI
791	75,000	2016	Victory Energy	(Low NOx) G/#2	Steam/SH	750/750	IRI
750	70,000	1996	Nebraska	(Low NOx) G/#2	Steam/SH	750/750	IRI
709	60,000	1979	Zurn	(Low NOx) G/#2	Steam	500	IRI
741	60,000	1979	Zurn	G/#2	Steam	550	IRI
795	40,000	1986	Cleaver Brooks	Gas	Steam	260	IRI
496	800	1990	York-Shiple	(Low NOx) G/#2	Steam	200	IRI
634	800	1972	York-Shiple	G/#2	Steam	150	IRI
SSB49	800XID	2019	Victory Energy	(Low NOx) G/#2	Steam	250	UL/CSD-1
620	800	1975	York-Shiple	G/#2	Steam	250	IRI
SSB46	600XID	2019	Victory Energy	(Low NOx) G/#2	Steam	250	UL/CSD-1
SB139	500	2001	Cleaver Brooks		Steam	150	
SB243	400	2018	Victory Energy	(Low NOx) G/#2	Steam	150	UL/CSD1
SB138	350	1994	Cleaver Brooks		Steam	150	
SSB39	300XID	2016	Victory Energy	(Low NOx) G/#2	Steam	150	UL/CSD-1
SSB50	250	2019	Victory Energy	(Low NOx) G/#2	Steam	150	UL/CSD-1
415	250	1980	Eclipse	#2 Oil	HT/HW	954	IRI
SB148	200	1995	Kewanee	Gas	Steam	325	IRI
SB146	200	1995	Kewanee	Gas	Steam	325	IRI

ONE HOUR QUOTE ON-LINE AT WAREINC.COM OR CALL 800-228-8861





NEW AND USED LIST continued

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Unit	HP/PPH	Year	Manf.	Fuel	Type	PSI	Ctrl.
SB-248	175XID	2019	Victory Energy	G/#2	Steam	150	UL/CSD-1
SB-249	175XID	2019	Victory Energy	G/#2	Steam	150	UL/CSD-1
SB-240	175XID	2017	Victory Energy	G/#2	Steam	150	UL/CSD-1
SSB-48	175XID	2019	Victory Energy	(Low NOx) G/#2	Steam	150	UL/CSD-1
SWVB1	1200	2017	Victory Energy	(Low NOx) G/#2	Steam	250	UL/CSD-1
SB-251	250	2019	Victory Energy	G/#2	Steam	150	UL/CSD-1
SSB-37	150	2019	Victory Energy	(Low NOx) G/#2	Steam	150	UL/CSD-1
SB-252	150	2019	Victory Energy	G/#2	Steam	150	UL/CSD1
SB-242	150	2017	Victory Energy	G/#2	Steam	150	UL/CSD1
769	150	1998	Precision	Electric	Steam	150	UL
SB-246	100	2019	Victory Energy	G/#2	Steam	150	UL/CSD-1
SB-239	100	2017	Victory Energy	G/#2	Steam	150	UL/CSD-1
SSB-41	100	2017	Victory Energy	(Low NOx) G/#2	Steam	150	UL/CSD-1
SB-241	100	2008	York-Shipley	Gas	Steam	150	UL
SB-237	70	2016	Victory Energy	G/#2	Steam	150	UL/CSD-1
SB-238	70	2016	Victory Energy	G/#2	Steam	150	UL/CSD-1
SSB-35	70	2016	Victory Energy	(Low NOx) G/#2	Steam	150	UL/CSD-1
SB-247	50	2019	Victory Energy	G/#2	Steam	150	UL/CSD-1
SB-234	50	2016	Victory Energy	G/#2	Steam	150	UL/CSD-1
SB-244	100	2018	Victory Energy	G/#2	Steam	150	UL/CSD-1
SSB-45	50	2019	Victory Energy	G/#2	Steam	150	UL/CSD-1

EVENTS
EVENTS
EVENTS

WARE will be exhibiting at:

IPPE EXPO 2020 - Jan. 28 - 30, 2020 - Atlanta, GA
 AHR EXPO 2020 - Feb. 3 -5, 2020 - Orlando, FL
 Campus - Feb. 10 - 14, 2020 - Denver, CO
 NFMT - Mar. 17 - 19, 2020 - Baltimore, MD
 AAE - Apr. 21 - 22, 2020 - Cincinnati, OH
 IDEA - Jun. 22 - 25, 2020 - Washington, D.C.

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COMING SOON

WARE'S BOILER RENTALS ARE EXPANDING TO TEXAS



WARE's boiler rental fleet is coming to Texas. Jeff Tigert will manage the 10 acre facility being built with a 7,500 sq/ft shop located in Denison, TX, just 1 hour and 20 minutes north of Dallas.

This strategic location was picked to better serve our Texas, New Mexico, Oklahoma, Arkansas and Louisiana clients.

Rental units from 2M/Btu up to 75,000 lb/hr and beyond will be available to rent from our new location.

Being thorough with your inspections page 3

The boiler room is an industrial ecosystem containing many pieces of equipment other than just the boiler. As you look ahead to your next shutdown period for inspections and routine maintenance, take a walk through the boiler room and look for items that are not normally on the maintenance schedule, and make sure that they are being monitored on a schedule, even if it is not on a frequent basis. The boiler itself may be in great shape, but if the supporting processes go down, then the boiler will inevitably go down as well. Downtime is highly undesirable when it is unplanned—make a serious effort to be the one who decides when the equipment goes offline. With some proper planning, minor issues can be addressed in a convenient manner long before they become major problems. If you need assistance putting together a proper maintenance schedule, WARE's experts are only a phone call away!

How to prevent rust and scale build-up in Your Firetube Boiler page 1

First, make sure you're performing a daily blowdown on the boiler. This helps get rid of excess calcium, which helps prevent scale build-up.

Second, using a deaerator system can be helpful to maintain the appropriate amount of oxygen in the water – which can help protect against rust.

The reality is that the tubes in a firetube boiler don't last indefinitely, but by following these tips and properly treating your feedwater, you can prevent rust and scale build-up. This will help those tubes last much longer – and save your facility money too!



Learn more on "How to Blowdown a Steam Boiler"



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