

Shutting down your boilers for the season

By Bob Cade of Cole Industrial, Inc.

Why worry about it now?

The problems that occur from improper storage of your boiler can range from general tube thinning due to oxygen attack to complete tube failure. Burner controls and valves can fail with catastrophic results. According to the National Board, last year's burner failures were responsible for more than 85% of fatal power boiler incidents. If your steam boiler operates at over 15psig it is a power boiler.

Never store a dirty boiler.

Unwanted moisture is bad under the best circumstances. Add some soot, and you have acidic slurry that corrodes iron. Believe it or not, boilers contain a large amount of iron. Get rid of the soot! If your boiler has soot blowers, use them. Follow the instructions and complete your soot blowing before you shut the boiler down. Most of you will have to clean your tubes the old fashioned way, with a wire brush and a vacuum. It's messy work, but commercial services are available at reasonable costs, and they deal with all the hazardous disposal issues that could arise.

Be safe!

If you have to crawl through a hole to get inside your boiler, you have a confined space. A confined space can have pockets of toxic gasses or low oxygen and must be checked before you enter it. If you can swing open a door to access all of your tubes without climbing through a hole, you're safe. Wear a fitted respirator when cleaning your boilers. The white dust masks aren't rated for this duty and the soot is harmful. Follow your confined space procedures.

Boiler Watersides

Now that the firesides are clean, you want to ensure that the watersides are scale and sludge free. You should plan on having your chemical treatment representative inspect the boiler when you open it. To open the boiler, you need to allow the boiler water to cool to 120°F or so and then drain the boiler. As soon as the boiler is drained, open the boiler. Any loose debris or sludge can then be washed out with fresh water; pressure washing isn't recommended. If you have any visible scale, the water treatment rep can adjust your treatment program to take care of this.

Everything else.

After cleaning, the boiler watersides must be completely dried out. This usually means blowing dry air through it with a heater or a fan. Inspect the burner while the boiler is open. All moving parts should move freely. The air damper, oil nozzle, and/or diffuser should be maintained in like-new condition. Use a light penetrating lubricant to coat all of the unprotected exposed metal parts. Inspect the controls. Any controls used to monitor the water level of the boiler should be opened and inspected for mechanical operation before reinstalling them. Use new gaskets on the low water controls. Try applying a little lead plate to the gaskets to help them release next year.

Putting the boiler to bed.

The boiler is dry and ready for storage. Block off all possible entry points for moisture. After you have this accomplished, place some moisture absorbing material (desiccant, like silica gel or quicklime) in trays in the firesides and watersides. Follow the instructions provided with the desiccant or this rule of thumb: two (2) lbs of quicklime or five (5) lbs of silica gel per 30 cubic feet of flooded boiler volume.

Affix large signs on the outside of the boiler detailing the location of the desiccant. Check the material periodically and freshen as needed. If the boiler is left outside, remove the electronics (for storage in a warm dry atmosphere) and cover the boiler completely.

A little care goes a long way

Take the time to store your boiler properly. We have provided some general guidelines for storage, but check with your manufacturer for detailed instructions.

Editors Note: This feature will be periodically updated and is intended to give general helpful guidelines on technical issues affecting the boiler industry. Always follow your operation and maintenance manuals.

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