

Water Treatment Newsletter

Published Quarterly For The Benefit Of
The Water Treatment Chemical User

Volume 6

Fall 2001

Proper Boiler System Start-up and Operation Saves Dollars

With winter rapidly approaching, it is of critical importance for building owners and facility managers to make certain that their boiler systems are ready for the season ahead. By following a few simple and relatively inexpensive steps, they can save big dollars in reduced fuel, maintenance and repair and replacement costs.

The following boiler system checklist will help the facility owner/manager avoid costly problems and save money on their boiler operation:

- ✓ Have a reputable boiler service firm disassemble the low-water cut-offs. The entire
- ✓ Ancillary equipment such as fans and pumps should be lubricated and checked for proper operation.
- ✓ When the system is in operation, a survey of all steam traps should be conducted to assure proper function. Leaking or improperly operating traps can result in significant fuel dollar losses.
- ✓ Finally, and perhaps most importantly, the services of a reputable water treatment company should be retained. The entire water treatment program, including the chemical program itself and pretreatment equipment

This Newsletter courtesy of:

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assembly should be thoroughly cleaned and reconditioned, as necessary, then tested before the boiler is put into regular service. During regular operation, the cut-offs should be tested daily.

- ✓ The service firm should also clean the burner and related equipment and complete a tune-up to assure maximum combustion efficiency.
- ✓ At the same time, the safety/relief valve should be tested for freedom of operation. This is of primary importance. The boiler must not be fired if the safety/relief valve is inoperative or otherwise defective. These valves should be tested once a month while in service, or rotated annually with a spare set.
- ✓ All pressure and temperature controls and gauges should be checked for satisfactory operation and adjusted or replaced as necessary. The water level gauge glass should be inspected and replaced, as necessary to indicate the correct water level at all times.
- ✓ The boiler fireside should be cleaned of all deposits. Dirty fireside surfaces not only waste fuel dollars, but can also result in stress and cracking due to overheating, as well as under-deposit corrosion.

such as softeners and dealkalizers, should be evaluated. Boiler waterside surfaces should be completely free of corrosion and scale deposits. At the same time, boiler water cycles of concentration should be optimized to minimize water and fuel losses in the blowdown.

When the boiler is first brought on line, it is typical for condensate iron levels to be higher than normal. This is due to surface corrosion byproducts in the piping and in receivers sloughing off and being carried back to the boiler. This will be characterized by a rusty or brown to black turbidity in the boiler water. Maintain higher than normal blowdown rates, especially bottom blowdown, until the boiler water clears. This is extremely important to prevent the occurrence of iron-based deposits on the boiler tubes. By following these procedures, the facility owner/manager will take a major step toward a more trouble-free, lower cost heating season.