

CLEAN AND GREEN

HOW BOILER MAINTENANCE SUPPORTS A COMPANY'S GREEN STRATEGY

BY **STEPHEN HANLEY**



Many big U.S. facility owners will be holding their breath until January 16, 2011, when the Environmental Protection Agency (EPA) plans to finalize its new, stricter air emissions requirements. Collectively known as the Industrial Boiler MACT Rule, these requirements may end up costing millions of dollars in upgrades to major industrial, commercial, and institutional boilers and process heaters, as well as changing work-practice standards for thousands of smaller (heretofore unregulated) businesses and public institutions.

The rule will mean a lot of work for the HVAC industry and probably long-lasting impact on the field of boiler system design. Resultant equipment enhancements will range from scrubbers and fabric filters to extensive emissions control equipment, depending on the type and size of boiler, and possible fuel switching to reach mandated emissions levels. In addition, facilities will need to identify energy conservation opportunities, establish energy management programs, and undergo regular boiler tune-ups—three requirements that would benefit every business and institution, regardless of facility size and volume of hazardous air pollutants (HAPs) produced.

Boiler maintenance should already be a key component of any company's green strategy, and it will become increasingly important for those companies needing to comply with the Industrial Boiler MACT Rule.

FIGURE 1 A REGULAR BOILER TUBE MAINTENANCE SCHEDULE CAN REDUCE FUEL CONSUMPTION BY 20% OR MORE.

In addition to reducing a facility's HAP emissions levels, regular boiler maintenance will allow facility personnel to breathe cleaner air and help companies use less fuel. Those benefits contribute to companies' focus on environmental stewardship. Plus, if companies choose environmentally friendly maintenance service providers and tools, they can further enhance their reputation as green businesses. Boiler tube cleaning is a big part of this maintenance issue.

CLEAN BOILERS MEAN CLEAN AIR

Companies can't promote themselves as clean, green places to work if the tubes and filters in their HVAC systems are packed with dirt. Particles in the system can move into the air within the work environment and then into employees' lungs. The problem often escalates in periods of extreme hot or cold weather, when systems have to work hardest to control temperatures and when the same air recirculates for months at a time. Exceptionally poor air quality can cause allergic reactions and illness, which isn't good for employees' well-being or productivity. To promote health and safety, filters and boiler tubes should be cleaned on a regular basis.

REGULAR MAINTENANCE REDUCES FUEL USAGE

Minimizing fuel usage is a key aspect of operating an environmentally responsible business. Many companies don't realize what a big difference clean tubes can make in terms of efficient boiler operation. Keeping boiler tubes clean can reduce fuel use by 20% or more. Less fuel means fewer emissions—and less money spent on keeping facilities running.

Environmental groups recognize the impact of boiler maintenance. In December 2009, the Environmental Defense Fund published a report in conjunction with Urban Green, the U.S. Green Building Council of New York, titled, *The Bottom of the Barrel: How the Dirtiest Heating Oil Pollutes Our Air and Harms Our Health*. The first item listed in the "Summary of Heating System Efficiency Measures," implores companies to "keep heating and hot water systems well maintained with regular boiler tube cleanings and yearly combustion efficiency tests." Companies that follow this recommendation will see the difference within the environment, as well as in their budget.

LESS DIRT MAKES FOR EASIER CLEANING

Most people know from maintaining their cars or homes that regular cleanings are a lot easier and a lot less expensive than sporadic massive cleanups. It only makes sense that the more often you clean, the less dirt you'll have to remove next time. But what if you could reduce the amount of dirt in your system in the first place?

The type of fuel you use can make a big difference in the amount of dirt that accumulates in your boiler tubes. For exam-



FIGURE 2 ROTATING TUBE CLEANING SYSTEMS WORK FAST AND DO NOT POSE A THREAT TO THE ENVIRONMENT.

ple, many older facilities in New York City and other large metropolitan areas still operate oil boilers. The article mentioned in the section above, *The Bottom of the Barrel: How the Dirtiest Heating Oil Pollutes Our Air and Harms Our Health*, recommends that facilities in New York City using No. 4 and No. 6 oil switch to No. 2 oil because it's much cleaner and requires less frequent boiler cleaning.

The article states, "Since No. 4 and No. 6 oil contain a high percentage of contaminants and produce greater particulate emissions when burned than No. 2 heating oil, boiler cleaning and maintenance is required frequently. During operation, soot accumulates on the surfaces of the heat exchanger and pipes, reducing the efficiency of heat transfer. This soot must be removed during the heating season by operating a soot blower. If the collected soot is not removed regularly, the efficiency of the boiler will decrease and more fuel will be required to heat the building."

If a company's green strategy includes a plan to switch to a cleaner fuel, the tubes won't need to be cleaned as often. But even if cleaning isn't required at the same frequency, it's important to not skip cleanings. The more soot that builds up in boiler tubes, the more inefficiently the equipment will run.

CHOOSE GREEN TOOLS

Using environmentally harsh cleaning methods can defeat the purpose. Weigh out all your maintenance options, along with the size of your facility, before choosing a particular type of maintenance service or tool.

For example, there are many options for boiler tube cleaning. High-pressure cleaning with water seems clean, but if your

facility is large, you can end up wasting a lot of water. This may be of particular concern if you live in a dry region. Likewise, chemical cleaning may be effective, but it can be bad for the environment. Runoff and spilling can be especially harmful. Be wary of tools like automatic blow-off devices that may promise to reduce your need for maintenance. These tools do not eliminate the need for tube cleaning during the year, so you may end up actually increasing the amount of effort and energy you put toward your maintenance plan.

Rotating tube cleaning systems are the most environmentally friendly option—they work fast, perform a more thorough cleaning, and do not pose a threat to the environment. The tool does all the work for you, with no dirty side effects.

FOLLOW THROUGH ON YOUR GREEN PROMISES

These days, there's lots of talk of going green. Most companies recognize the importance from a public relations standpoint. And many customers demand to buy from green companies. But going green is easier said than done. Of course, many large

facilities don't have a choice—they have to find a way to comply with new, stricter regulations. But for companies of any size, it's easy to focus on things like fuel type and emissions controls, forgetting that HVAC maintenance is also important for environmental protection. Keeping air clean and healthy to breathe is one of the easiest ways to act on a green strategy—as long as you clean your boiler tubes regularly and with green tools. **TB**

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Hanley is president and CEO of Thomas C. Wilson, Inc. With over 80 years of experience, Thomas C. Wilson, Inc. provides air, water, and electrically driven tube cleaners, as well as tube expanders, tube removal and portable pneumatic tools, torque controlled expander drives, and countless other

products for the boiler, condenser, and heat exchanger industry. Wilson products are supported with a 24-hour service hotline. For more information, write to Thomas C. Wilson, Inc., 21-11 44th Ave., Long Island City, NY 11101-5088, USA; call (800) 230-2636; fax (718) 361-2872; e-mail tcwilson@tcwilson.com; or visit www.tcwilson.com.

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