Eddy's Boilerhouse News

TIP OF THE MONTH FOR THE MAINTENANCE DEPARTMENT

By Eddy Emerson

Leaking Steam Traps & Other Stuff

We had a women call the other day and told us that there was steam leaking in the school building and wanted to know if we could bring one of those *steam traps* over and caught it for her. I told her that once you let those steam molecules get loose you can't trap them you have to shoot 'em. And, I would be right over with my gun. She didn't think I was as funny as I thought I was.

But that does bring up leaky steam traps and other stuff. But, one of the main sources of steam leaks in the average industrial plant is the *steam traps*, especially when they are old, improperly selected in the beginning, and subject to indifferent maintenance. One steam trap blowing through continuously can lose large quantities of steam and heat (this means dollars), if not caught soon after the leak starts.

A simple example will illustrate the point I am attempting to make here. Annual cost of a steam trap with a 0.125 inch orifice, wide open, under 100 psig steam, discharging (61,600 Btu's per hr) to atmosphere, calculates as follows, using natural gas at a cost of $0.67 per therm:

$$\text{Annual cost} = \frac{540 \text{ million Btu's} \times \$0.67}{100{,}000}$$

$$= \$\ 3{,}618.00 \text{ per year}$$

The lesson is obvious; fix that leak. It is also important to institute a regular program for testing all steam traps.

There are many other sources of heat leaks in the steam and condensate system in the industrial steam plant layout. It is a good idea to start a program of "find and fix" for all such leaks, in conjunction with the steam trap patrol. Larger firms have crews assigned to these operations on a regular basis.

I want to empress upon you that the size of leaks, however small, can often be deceptive. They can waste enormous amounts of money into the atmosphere if not corrected, as a look at the previous example will prove.

A few of the usual source of leaks to be guarded against and searched out are:

- All connections—threaded, welded, and flanged,
- All valve stems and packing glands.
- All steam trap by-passes.
- Reducing-valve diaphragm cages.
- Holes in heating coils.
- Condensate and boiler feed pump seals and glands.
- Overflows for condensate tanks, feedwater tanks and deaerators.

- Leaking drain and blowdown valves.

In addition to the heat wastage, there is always the danger of damage to the equipment from the steam and hot condensate, such as corrosion, erosion, and spoilage of insulation.

They all drain the money cow.

Emerson Boiler, Inc.
6081 N 57th Dr.
Glendale, AZ 85301
623-847-4788 Phone 623-847-2386 Fax
Web page www.boilersmadesimple.com or www.emersonboiler.com
E-mail EBBOILERMIKE@AOL.COM