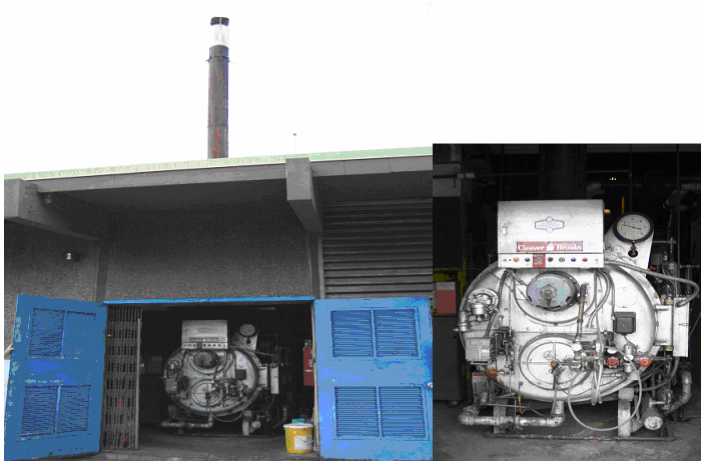
Stanlin Energy System - Draft Regulator Case Study

Mountlake Terrace Pool Pavilion

Mountlake Terrace, WA

With the Stanlin Energy System installed, this 125 Horsepower Cleaver Brooks boiler has maintained a consistent reading of under 4.0% oxygen for over 10 Years.

- The boiler has not required tuning for over 10 years.
- The Boiler has continued to save over 20% for the last 10+ years.



The Pavilion – Realizing a 20.7% Fuel Savings after Comparing all the Factors including Degree Days, Water Usage, and the Number of Swimmers.

	Low Fire		High Fire	
	Before	After	Before	After
Stack Temperature	234°	234°	277°	241°
Oxygen %	7.7%	3.5%	5.5%	3.5%
Excess Air %	58%	22%	40%	22%
CO2 %	8%	10.5%	9.5%	10.5%
CO - PPM	20 - PPM	5 - PPM	0 - PPM	0 - PPM
Total Stack Pressure *	-.06 IWC	+.04 IWC	-.25 IWC	+ 1.3 IWC
Pitot Tube Reading	.02 IW	.01 IW	.11 IW	.08 IW
Stack Velocity **	650 FPM	450 FPM	1550 FPM	1300 FPM
Stack Volume ***	510 CFM	353 CFM	1217 CFM	1021 CFM

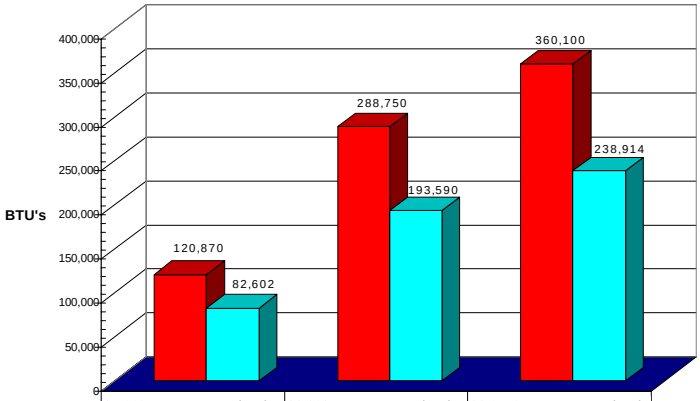
(Standby cycle heat losses are also reduced)

* Total Stack Pressure: the total of static & velocity pressure

** Stack Velocity: the speed of exhaust gases in feet per minute

*** Stack Volume: the volume in cubic feet per minute up the stack

As can be seen from the above before & after readings the efficiency of the boiler's operation will be significantly increased due to better combustion with less fuel, control of excess air & draft pressure, better heat transfer (especially on high fire) and a reduction of total stack loss due to lower stack velocity and cubic foot volume (which will increase hot gas dwell time in the boiler)



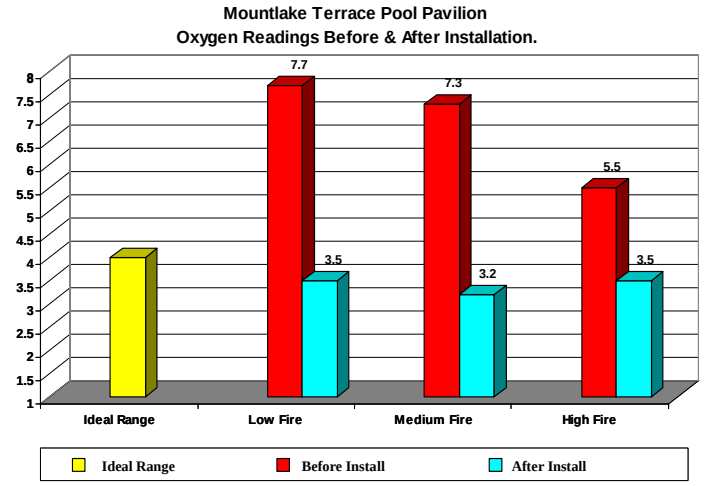
BTU Per Minute Stack Loss Reduced by 31.66%
20.7% Savings on Fuel Costs Over Last 11 Years!

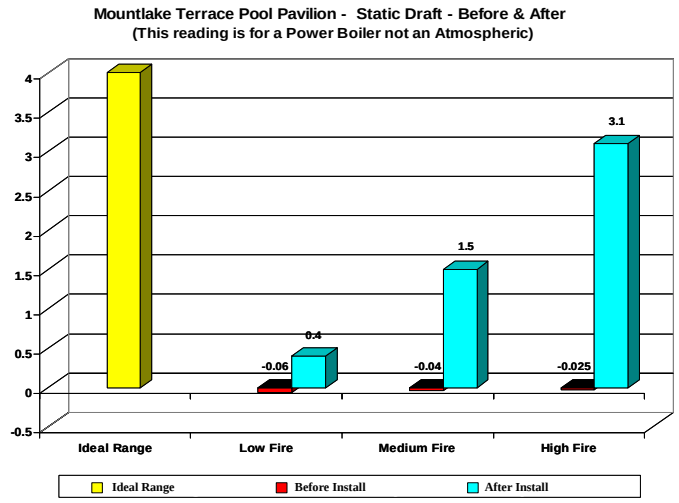
Contact a ECMI Associate to Schedule a Feasibility Study for Your Facility!

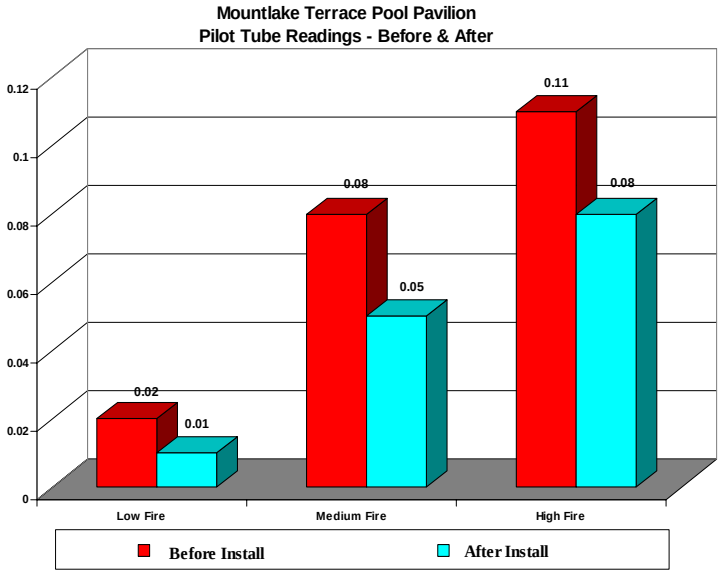
414-964-0072

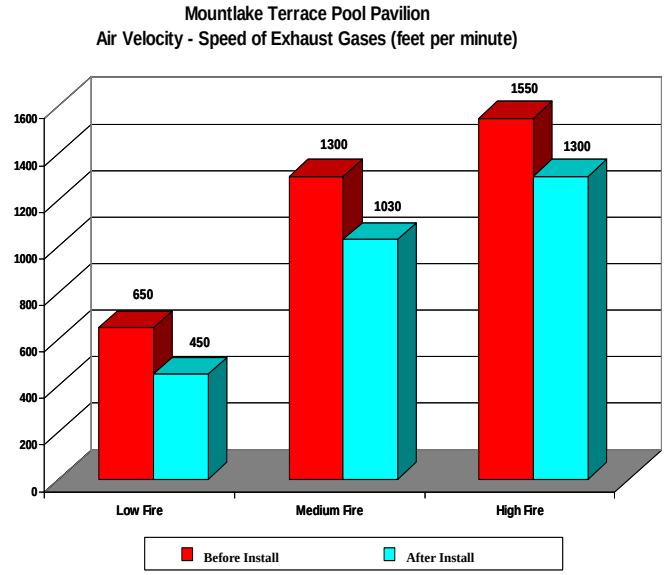
www.ecmi.us

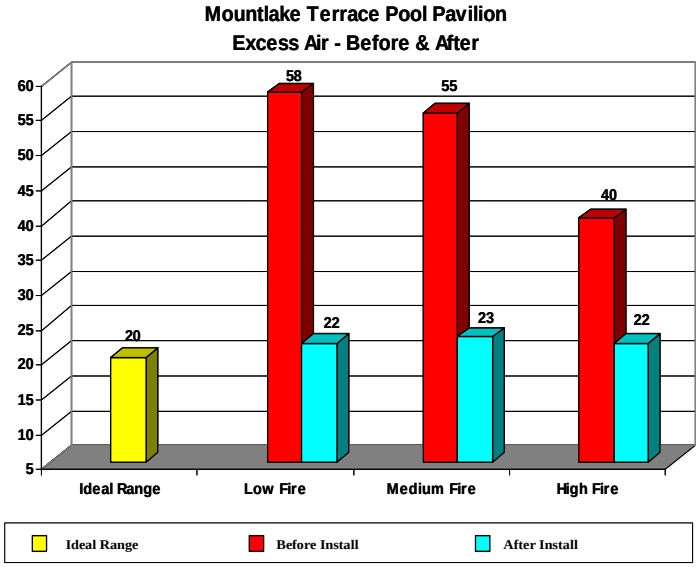
The Mountlake Terrace Pool Pavilion
Before & After Readings

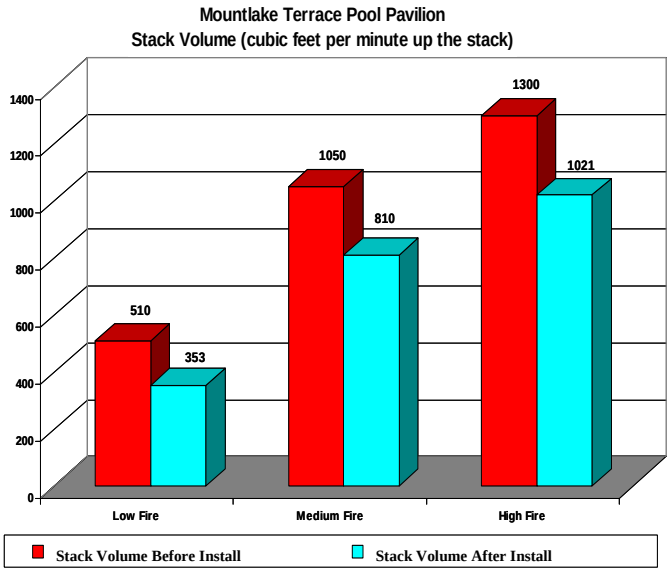












Client Feedback

MOUNTLAKE TERRACE
5303 228th Street Southwest
Mountlake Terrace, Washington 98043

RECREATION AND PARK DEPARTMENT

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BALLINGER GOLF COURSE • 775-6

Mr. Terry Parks, President
American Energy Services
P.O. Box 3401
Arlington ,WA. 98223

February 21, 1992

Mr. Parks:

This letter is written to confirm to you and others our satisfaction to date with the excess air reducer / Constant Flue Control, installed on our Cleaver Brooks natural gas firetube boiler on June 28, 1991.

Our boiler provides low pressure steam for space heating at our Recreation Pavilion, hot showers for attendees, and keeping the swimming pool at a constant year-around temperature.

Over our first six full months of tracking since installing the Constant Fuel Control we noted considerable energy savings relative to our volume of facility usage. Right away we could tell that the boiler would come up to pressure more quickly. The boiler is running very smoothly and is holding steady combustion readings since the installation. Strong winds and lower temperatures do not effect the combustion reading at all, now.

Tracking the therm of energy used per attendee during the months of July through December 1991, we show a drop of 20.7% in consumption when compared with statistics for the exact same period one year earlier. This does not take into account the fact that the boiler was off for a considerable period of time a year ago in August during a pool repair, so we are confident that the savings figures are conservative.

Savings of this amount are especially welcome during these days of tighter budgets due to the economy. We are pleased with the early results and look forward to many years of consistent, trouble-free energy savings with the Constant Flue Control Technology.

Sincerely,

Jack Gartin
B & O Maintenance Supervisor
Mountlake Terrace Recreation and Park Department

JG/dp.

Note –
Our client was kind enough to offer this letter so that bothersome phone calls could be avoided. Thank you for being considerate and, most pleasing this client.
— Terry Parks

MOUNTLAKE TERRACE
5303 228th Street Southwest
Mountlake Terrace, Washington 98043

RECREATION AND PARK DEPARTMENT

FAX • 425-775-2365
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To Whom It May Concern,

We had the constant flue control installed on June 28, 1991. Today, some ten years later, the combustion readings on our equipment are almost the same as when the control device was installed.

The most interesting aspect of this is the fact that we have not had to tune the boiler once during this ten years. We have found that your technology not only has lived up to our expectations, but has exceeded them by a wide margin. The ten year guarantee will expire within a few days. This device seems to be in substantially the same condition now as it was when you installed it, and I expect our company will continue reaping rewards from this unit long after I am gone.

When our boiler finally gives up twenty or thirty years from now, and is replaced by a new one, the technicians can simply recalibrate the constant flue control unit to match the requirements of the new boiler, and it should be good to go for a few more decades!

Our average fuel savings have been in excess of twenty percent. With the rapidly escalating energy prices of the past few months, and the prospect of additional price increases on the horizon, I wish your technology was applicable to our electrical power needs as well! Perhaps it would help to slow the advance of power prices too, if you can install this device in gas fired power plants.

Sincerely,
Donald S Tiples 6-27-2001