

# NFMT March 10-12, 2009

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## Boiler Replacement Saves an Estimated 14 Percent

### Cleaver Brooks

When President Bush mandated a 2 percent decrease in annual energy costs for all government buildings, Doug Baughman got to work researching ways to enhance his current boilers and increase efficiency.

Baughman, building manager at the Denver Federal Center — a sprawling 3.5 million-square-foot campus occupied by the U.S. General Services Administration — knew the facility's boilers were running below industry efficiency standards, and he planned to retrofit the old boilers with new burners.

But after he brought in Cleaver-Brooks to help assess the facility, he decided on a different strategy: not a set of upgrades, but a complete boiler overhaul that resulted in a 14 percent efficiency increase and hundreds of thousands of dollars saved.

The new boiler systems included six firetube boilers called Clearfire H units; four firetube condensing boilers called Clearfire C units; several firetube boiler upgrades with CB Hawk integrated control systems; and five retrofits with C-B Pro-Fire burners and Hawk ICS.

Simply upgrading the old burners would have involved a lower up-front cost, but replacing 85 percent of the system brought a much higher ROI. "The government typically seeks a 10-year payback on capital projects," said Baughman. "We're looking at payback in one year, based on our reduced fuel costs."

According to Baughman, the new systems have easily surpassed the presidential mandate of 2 percent savings, and the energy efficiency has increased 14 percent. By his estimates, the campus saved taxpayers a quarter of a million dollars in fuel costs from October 2006 to December 2006 alone. Maintenance costs and water consumption have also been dramatically reduced. In addition, after the reconfiguration, the heating system surpassed Colorado government criteria for emissions.

The new systems were fully integrated with the facility's centralized environmental management system. The new boilers were considerably more compact than the existing boilers.

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