

# The Detroit Thermal VOICE

SPRING 2004



DETROIT THERMAL, LLC IS A THERMAL VENTURES II, LP COMPANY

## A year of learning and accomplishment

Anniversaries are a natural time to review the past and plan for the future. Detroit Thermal completed its first year of operation in late January and will soon reach the end of its first full heating season.



These occasions give us an opportunity to assess how far we have come and to further develop plans for where we want to go. A quick look back shows how well Detroit Thermal has established itself:

- We assembled a team of more than 60 dedicated employees, most of them from the Detroit metropolitan area. During our first year together, Detroit Thermal employees have learned the intricacies and complexities of Detroit's steam distribution system. We have met with and listened to our customers. And we have developed a strategy for growth and improvement.

- We completed \$4.5 million in capital improvements to the steam system, including retubing the Number 1 boiler at Beacon Heating, uncovering and repairing 44 underground steam leaks, and initiating a three-year program to upgrade steam joints and expansion joints.
- We installed an electronic network to improve information flow between administrative, technical, accounting and marketing areas.
- We made our first rate filing with the Michigan Public Service Commission. The proposed tariff (\$17.94/mlbs plus a fuel adjustment based on the New York Mercantile Exchange natural gas rate) is lower than the contract rate many customers had when we took over. As of this writing, the case is moving through the commission's process in an orderly manner.

We have accomplished a great deal in a short time. However, our most important achievement is the development of a detailed, long-range plan.

The more than \$4 million we spent in 2003 is only the first step in a planned \$22.4 million

improvement program. Between \$6 million and \$8 million has been earmarked for capital improvements in 2004. These include replacing control systems on two boilers, replacing motor generators at the Beacon plant, upgrading insulation in manholes and reconstructing portions of the steam tunnel pipe structures.

We are also investigating innovative new technologies, such as chilled-water and hot-water loops that will increase energy efficiency. These loops are compatible with the existing steam system and bring energy generation closer to customers, thereby reducing the loss of energy between the source and the user.

In today's energy market, district energy is a reliable, cost-effective source of heat, hot water and cooling. We're working hard to make sure it not only retains its competitive edge but also increases the many advantages it brings to customers.

Chuck French  
President and General Manager,  
Detroit Thermal, LLC

# Complexities of self-generation outweigh possible benefits

At first glance, owning and operating your own steam-generating boiler may seem like a good way to reduce the cost of heat and hot water. However, a closer look reveals that the true cost of self-generation makes the steam service from Detroit Thermal a better solution.

## HIDDEN EXPENSES DRIVE UP COST

“When building managers consider alternate sources of steam, they don’t always look at the whole picture,” says John Kozar, Detroit Thermal account executive. “They neglect to take into consideration the amount of space a boiler occupies, space that could be used for office, warehouse or other revenue-producing activities. And, they forget to factor in a variety of expenses that are not immediately obvious.”

For example, Kozar says, the cost of the boiler itself may be clear

but the cost of the necessary apparatus and infrastructure may not be well documented. Items such as feed-water pumps, fans and electric operating controls add up. Then there is the cost of the capital to purchase the boiler. This shows up as interest on a loan or in the loss of funds that could be better invested elsewhere.

Electricity is another hidden cost. Facilities with steam-generating boilers spend more for electricity. “It takes electricity to run the boiler feed-pump, chemical feed-pumps, the forced draft fan for exhaust and the boiler controls,” Kozar explained. “Increased electric usage adds to the cost of running the system, but it’s hidden because it shows up in a higher electric bill.”

Another often overlooked expense of owning and operating a boiler is the cost of chemicals. To keep a boiler operating efficiently, city water must be treated before it enters the boiler system. Other chemicals are needed to remove scale deposits, a procedure that should be performed annually to ensure the efficiency of the boiler and help control fuel use.

## BOILERS NEED EXPERT MAINTENANCE

Removing the scale deposits requires scraping and chemi-

cal treatment. At the same time, while the boiler is off, the fire side of the boiler must be cleaned and any soot or other deposits carefully removed.

“Maintenance can be time-consuming and expensive, but it must be done regularly to keep the system operating efficiently,” Kozar said. In addition to an annual overhaul, dissolved and suspended solids must be removed from the boilers throughout the heating season.

Efficient boiler operation requires frequent flu-gas analysis to ensure that the system is operating at the proper fuel/air ratio. At large boiler plants, such as those run by Detroit Thermal, oxygen is monitored, and automated controls are used to adjust the fuel/air ratio. These complex, automated systems are too expensive for small steam-producing operations, which must rely on frequent manual adjustments based on flu-gas analyses.

“At full load, with brand new, clean burners and a factory-trained technician to adjust the fuel/air ratio, a new boiler may operate at 80 percent combustion efficiency,” Kozar said. “But seasonal efficiency, the only kind that really counts when it comes to cost savings, is much lower because of stack losses between firings, low flame temperature caused by short cycling, ineffi-



All self-generation boilers, including the different types pictured here, take up a lot of valuable floor space.



## The Detroit Thermal advantages

Detroit Thermal steam service offers many advantages over self-owned and -operated boilers:

- More cost-effective steam.
- Increased reliability.
- Fewer operating responsibilities.
- Fuel diversification.
- Access to expert assistance.
- Economies of scale.

cient partial loading during off-peak periods of the year as well as other factors.”

Seasonal efficiency, not peak efficiency, is the key to true savings. A boiler for self-generation has to be able to meet peak requirements, even though that output is required only a few days a year. Most of the time a boiler operates at less than full-load and, therefore, at less than peak efficiency. “Often boiler manufacturers’ claims of efficiency are based on peak efficiency, although that is something a boiler achieves only a few times during a heating season,” Kozar said.

**DETROIT THERMAL STEAM,  
RELIABLE AND COST-EFFECTIVE**

Detroit Thermal’s automated systems and constant monitoring ensure that its boilers operate at peak efficiency at all times, and the availability of 18 boilers, some hot and some ready to be fired at a moment’s notice, also ensures reliability.

“Redundancy is too expensive for a small operation, but it’s an important part of the way we ensure reliable steam service to our customers,” Kozar said. “Facilities that rely on one

boiler are putting all their eggs in one basket.”

They are also relying on only one type of fuel – natural gas. The cost of natural gas is three times higher than it was just a couple of years ago. While the natural gas market is volatile, the price is expected to remain high for the foreseeable future. Detroit Thermal has access to diverse fuels, including steam

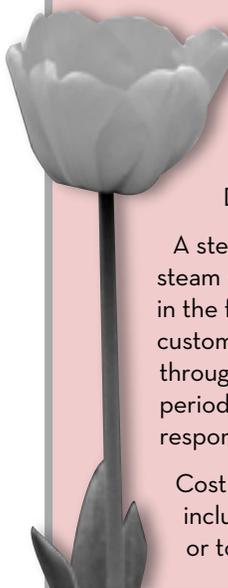
generated from burning trash by the Greater Detroit Resource Recovery Authority.

Kozar suggests that building owners, engineers or architects who are thinking about installing boilers make sure they inquire about all the hidden costs in operating the system.

“And then think about the time and manpower it will take to monitor and maintain the system, the risk of relying on just one boiler and the disruption of boiler installation, along with related expenses such as removing old piping and installing new vent liners for chimneys. Compare that to the ease and reliability of Detroit Thermal steam and the availability of our trained technicians who can help if you have a problem, and then make your decision,” he said.

For site-specific analysis of the differences between self-generation and Detroit Thermal steam, or for questions concerning the use of steam in a new building or a building renovation, contact John Kozar or any other member of the Detroit Thermal sales and marketing team at 313.963.3844. ■

## Seasonal shutdown- restart service available



As the days lengthen and winter’s chill fades away, the need for steam decreases. Soon it will be time to turn off the steam in facilities that do not use it for hot water, absorption cooling or processes such as sterilization. These customers can take advantage of Detroit Thermal’s seasonal shutdown-restart service.

A steam service technician will visit the facility, shut down the steam system and read the meter. A technician will visit again in the fall, turn the steam on and read the meter again, and the customer won’t be charged for any steam that may have leaked through and registered on the meter during the shutdown period. Customers who turn the steam off themselves are responsible for all steam that registers on the meter.

Cost of the seasonal shutdown-restart services is \$70, which includes both the spring and fall visits. For more information or to schedule a visit, phone 313.963.3844. ■

# Company and employees help fight homelessness in Detroit

Detroit Thermal and its employees are working with Coalition on Temporary Shelter - Detroit (COTS) to help solve the problem of homelessness in Detroit.



The company contributed funds to help COTS meet the expenses involved in providing emergency shelter, transitional housing and supportive housing for physically or mentally challenged homeless adults. Detroit Thermal employees are contributing in other ways, and in December, they donated new and almost-new clothing for COTS residents.

"We collected bags full of clothing, including many men's coats,

which COTS officials said they badly needed," said Kimberlee Simuel, administrative assistant in the steam distribution department. Simuel had served as a volunteer at COTS and brought the needs of the organization to the attention of Detroit Thermal management.

Employees intend to stay involved with COTS and to assist in activities such as preparing and serving food at the shelter.

COTS is a non-profit organization dedicated to helping homeless individuals and families break the cycle of homelessness. It serves approximately 2,000 homeless individuals a year at its emergency shelter and close to 260 individuals and families in its transitional and permanent housing program. More than 20 percent of those served in the shelter are children who enter with their families. ■

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