



Before installation of its new system, Knife River — Western Oregon Division's prestress boiler required two full-time employees, regular state inspections, expensive chemical treatments and expensive rebuilds. Total cost savings of the new vapor generator system are \$310,000 per year.



Knife River — Western Oregon Division's new vapor generator system requires only part of one person's time to maintain, meets all state {DOT} and Prestressed Concrete Institute requirements.



Experience the Kraft Energy Cost Savings Advantage.

Knife River Corporation recently received the MDU Resources Group, Inc. Einstein Award. These awards are bestowed upon employees of MDU Resources for their process improvement ideas that improve operations and save the corporation money.

The following article appeared in July/August 2007 issues of The Resource, an MDU Resources Group, Inc. publication.

Knife River Corporation

Employee(s)/company: Nick Rinen, Terry Compton, Jay Patel and Loren Later of Knife River — Western Oregon Division researched and installed a new high-efficiency vapor generator system at its Prestress Concrete operations in Harrisburg, Ore.

Process improvement idea: In response to the rising cost of natural gas used with Knife River Prestress' boiler, the team researched alternatives and worked with state agencies to install a new high-efficiency vapor generator system. The system is programmed to maintain low ambient temperatures during concrete set time to keep the concrete from freezing, ramp up when concrete begins the hydration process and ramp down at the end of the curing process.

Cost savings: Knife River Prestress' old boiler required the supervision of two full-time employees, regular state inspections, expensive chemical treatments and occasional rebuilding, exceeding maintenance costs of \$100,000 per year. Total cost savings of the new vapor generator system are \$310,000 per year. In addition to the monetary savings, the system saves a significant amount of natural gas.

The writer, Jill Furaus, is an intern in the Communications and Public Relations Department at MDU Resources Group, Inc. and can be reached by email at jill.furaus@mduresources.com.

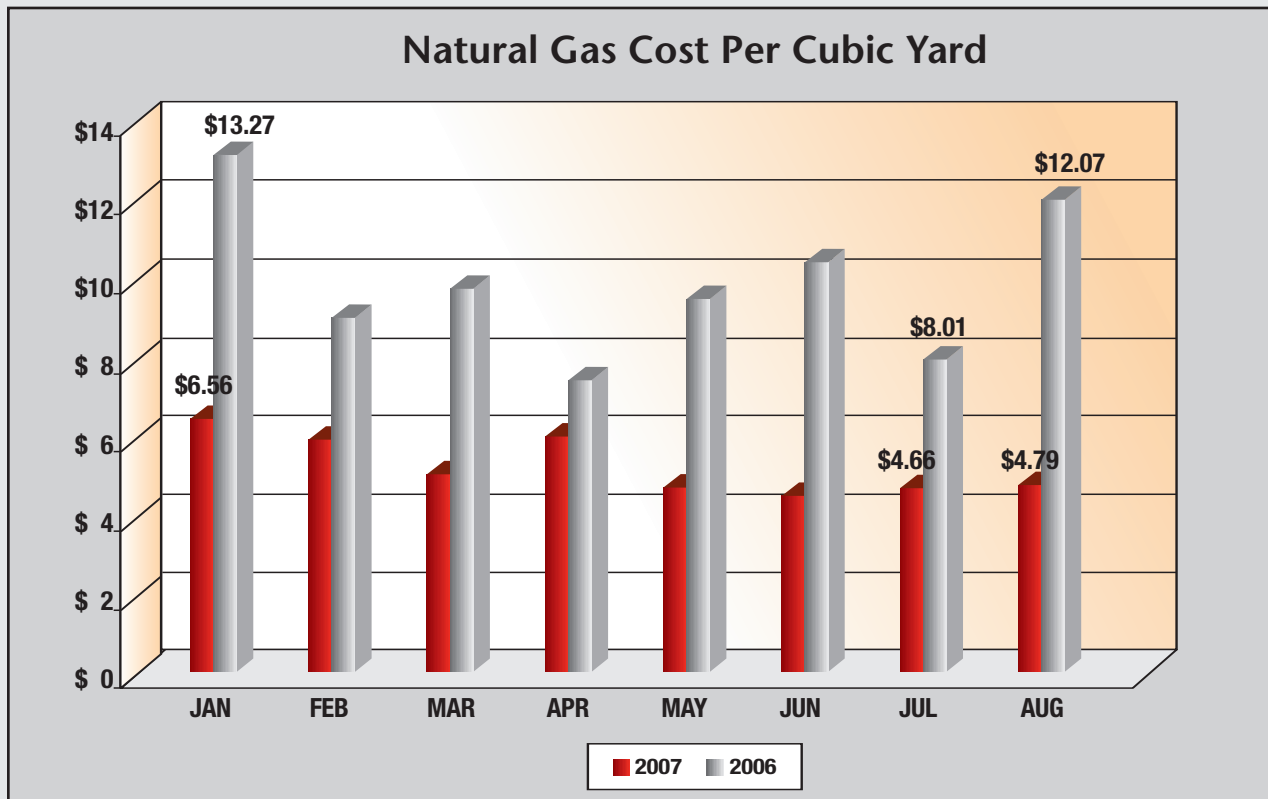
Review the facts and then select Kraft Energy.

The following chart and graph compare the Knife River Corporation's energy usage and cost for 2006 and 2007.

Gas Bill 2007	Volume in CY 2007	Gas Bill 2006	Volume in CY 2006		2007 Cost/CY	Therms	Therms/CY	2007 Cost/Therms
\$14,106.68	2,150	\$31,481.63	2,373	Jan	6.56	14,468	6.729	.097502626
11,661.55	1,948	34,425.92	3,772	Feb	5.99	11,657	5.984	1.00039032
10,259.13	2,036	38,685.00	3,935	Mar	5.04	10,071	4.946	1.01868037
13,225.56	2,204	27,350.80	3,660	Apr	6.00	13,483	6.118	0.98090633
10,987.00	2,312	30,897.56	3,224	May	4.75	12,673	5.481	0.86696126
13,969.21	3,099	28,493.18	2,709	Jun	4.51	14,311	4.618	0.97611697
13,000.58	2,790	20,395.79	2,547	Jul	4.66	13,219	4.738	0.98347681
13,851.00	2,894	27,921.98	2,313	Aug	4.79	14,195	4.905	0.97576611

\$101,060.71

\$239,651.86



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