Written by Rick Carter, Executive Editor
Monday, 01 June 2009 00:00

How green is your maintenance operation? That's what we wanted to learn from Panelists this month. We requested them to "briefly describe one ‘green' activity recently implemented by their department, and tell how effective it has been." I expected a flood of answers. I received a trickle.

Why the limited response? There's no shortage of great industrial green accomplishments today, nor is there a shortage of opportunities (see Sidebar). But if you read Jane Alexander's "My Take" column in the May issue, you learned that interest in green strategies, like saving energy, still may not be a given in the industrial world—
or at least not as obvious to industrial practitioners as one would expect
. Maybe our Panelists were saying the same thing.

Interpretations and definitions vary

"I could find nothing my company is doing at my location that I could use either as a good or bad example," reports a Panelist from the East Coast.

Another professed a high level of skepticism about the many green claims being outed today. "I hear a lot of talk and see a lot of ads that say what people are doing to go green," says this West Coast reliability consultant, "but I fail to see where most of this has anything to do with green. It is all a lot of hype." While many in Industry may not share this view (and, presumably, hope he is wrong), it's disturbing that this Panelist sees evidence supporting his opinion.

There may be a nugget of wisdom here: As with most significant trends, it's important to realize that there will always be those who make the real strides and those who are simply along for the ride.

Some Panelists also define green activities more narrowly than others. For example, a maintenance manager from the Northeast is "embarrassed to say that we have not put any green initiatives in place here." Nonetheless, his company has been keeping a close eye on energy usage and looking for new ways to recycle waste products—*activities others might*

consider part of a green strategy
. In this Panelist's view, these actions are driven by cost initiatives, not green initiatives.

In-practice energy savings

It also appears that, in many operations, green practices have existed long enough that they've become standard practice—*not unusual or new*—and continue to be built upon as a matter of consistent company policy. Here's a sampling, based on written responses and telephone interviews with Panelists:

"Our company has a full-time staff working 24/7 managing energy," says a reliability engineer at a process plant in the South. "They monitor production compared with demand in the plants, and they shut down or start up plants and equipment to balance the energy-demand cost with the production cost." He observes that "it's heck on the machines" to start and stop them in this manner, but that the cost of power makes it a necessity.

This Panelist notes that his company has also installed motion sensors in its corporate offices, reprogrammed the offices' HVAC system to shut down overnight and installed governors on its fleet of delivery trucks to ensure that speeds don't exceed 65 mph. Two years ago, the company also purchased a software logistics program that maps out the most energy-efficient routes for its delivery drivers.

But such activities may still be unusual in the broader industrial view because "saving energy is farther down the list for a lot of manufacturers," observes this Panelist. "Right now," he adds, "manufacturing operations are looking for ways to save, and many of them are looking for ways to save themselves. For most companies, if they looked at it, however, they would probably find that 5% to 10% of their bottom line is going out in wasted energy."

Not surprisingly, this message is not lost in the utility sector. A Midwestern utility-plant Maintenance Engineer, for example, says his operation recently took steps to "ensure that lights, computers, chargers, etc., are not left on when classrooms and offices are not occupied," though the program is too new to have shown results.

Variegated shades of green

Most responding Panelists also seem to agree that, as suggested above, green can refer to

many tactics that, while they may save energy, also reduce consumption of resources and limit environmental impact.
At a discrete manufacturing operation in the upper Midwest, for example, a machine repairman and PM leader reported that one of the new green activities implemented in his department is enabling the cleaning, recycling and reusing of the quench used in an induction-heating process. "This allows us to pull the impurities out and not drain our holding tanks to our wastewater treatment plant as often as we used to," he says. "This is a big cost savings because of not having to change the complete tank as we did in the past."

Another Panelist described implementing a water-saving strategy, along with methods to detect air and gas leakage. "We installed thermostatic valves in our cooling process," says this maintenance supervisor at a heavy-industry company in the Midwest. "The valves open when cooling water reaches a high set point, and the water then goes to our cooling tower. Prior to the installation, water ran constantly, often overflowing our cooling tower. The valve installation saved us approximately $3000 a month or $36,000 annually."

To catch costly gas leaks, this Panelist's maintenance team uses a wide-ranging Passive IR gas-imaging camera. "The camera sees various organic compounds including benzene, butane, ethane, ethylbenzene, ethylene, heptane, hexane, isoprene, MEK methane, methanol, MIBK, octane, pentane, 1-pentane, propane, propylene, toluene and xylene. We found leaks as small as 0.09 SCFM," he says. "Our total leaks were quantified to a yearly savings of $6800." Also in his toolbox: an ultrasonic finder to detect air leaks that he estimates saves his company $25,000 annually.

Other methods Panelists employ include some that are less intricate, but no less effective. A maintenance supervisor at a food-production facility in the Midwest, for example, has begun sending his cordless-tool batteries to a battery rebuilder. "So far, I have been very satisfied with the service and quality of the rebuilt units," he says. "There is a money savings, and we are keeping plastic and chemicals out of the landfill." **MT**

What's on your mind?
Have a question or comment on what you've just read in this column? Have a suggestion for a future Reader Panel question? Let us hear from you. E-mail: rcarter@atpnetwork.com

Energy-Saving Opportunities Abound

Based on 440 assessments made in 2006 and 2007, the Department of Energy identifies the following industrial top energy-saving tactics in the areas noted. The tactics chosen are those that save the most money over the shortest period of time. Approximately half of the DOE assessments took place in chemical manufacturing, food production and paper manufacturing operations, and most of the assessments were conducted in steam and process-heating applications, partial results of which are included below. For complete results, visit www.doe.gov

Top 5 Energy-Saving Opportunities In Steam Operations

1. Reduce steam demand by changing process-steam requirements
2. Use an alternate fuel
3. Change boiler efficiency
4. Add or modify operation of backpressure steam turbine
5. Change condensate recovery rates

Top 5 Energy-Saving Opportunities In Process-Heating Operations

1. Use of flue or exhaust gas heat for combustion air heating
2. Reduce oxygen content of the flue (exhaust) gases
3. Heat cascading: use of flue or exhaust gas heat
4. Heat recovery from hot products or other heat sources from a furnace
5. Use of oxygen for combustion

Source: U.S. Department of Energy 2007 Save Energy Now Assessment Initiative.

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