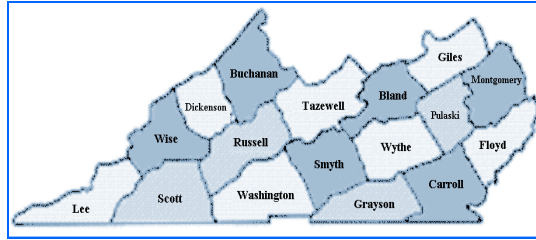


January 2012

# MTC Environmental and Energy News



Serving 17 counties and 4 cities in SWVA

[www.mtcofswva.org](http://www.mtcofswva.org)

*"The MTC will be recognized as the technical resource of choice for Southwestern Virginia's business community."*

### FROM THE DIRECTOR



Keith Thompson, Executive Director

Thank you for reading our **Environmental and Energy Newsletter**. Remember to visit our website at <http://www.mtcofswva.org> to find out more about the MTC, our staff, and our upcoming events. The MTC has received grant awards that will support the MTC Green Manufacturing Initiative & Energy Efficiency Development in Southwest Virginia. Look for future E3 Environmental and Energy Newsletters.

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## Upcoming Events

- Energy Manager Workshop, Crossroads Institute, Galax, VA— March 7th
- Environmental/Energy Peer to Peer , Crossroads Institute, Galax, VA— March 7th
- Southwest Virginia Technology Council Energy and Technology Expo, Southwest Virginia Higher Ed Center,

## Please take the following Energy Manager quiz.

1. Has the organization identified one person as energy manager / coordinator / leader / champion?  
Yes \_\_\_ No \_\_\_  
*Defining ownership, irrespective of the person's other duties, may help ensure the management of energy consumption is not forgotten.*
2. Does energy consumption appear as a standard item on facility management's regular meeting agendas?  
Yes \_\_\_ No \_\_\_  
*This could be specific energy meetings, continual improvement meetings, or general plant staff meetings.*
3. If so, does the management review of energy data include trending over time?  
Yes \_\_\_ No \_\_\_  
*Energy improvements only show up over time.*
4. Are measurable objectives and goals in place for energy performance indicators?  
Yes \_\_\_ No \_\_\_  
*Measurable goals prompt management action beyond tracking.*
5. Is an internal audit system for energy systems in place with regularly conducted audits?  
Yes \_\_\_ No \_\_\_  
*This audit system could simply take the form of a regular TPM activity.*
6. Do employee communications include energy topics?  
Yes \_\_\_ No \_\_\_  
*Employee behavior can be a large driver of energy costs, i.e., Reminding people to turn off lights and equipment.*



Keith Litz PEM

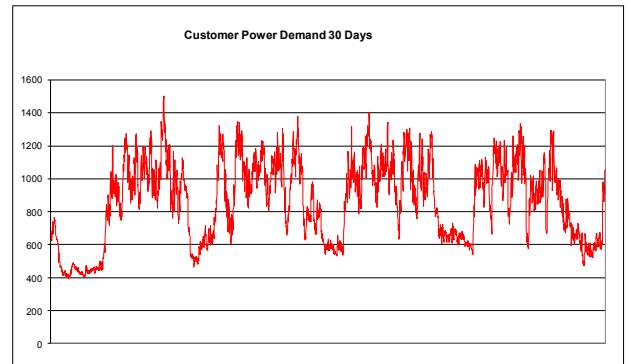
# ENERGY MANAGER CORNER

Within your organization a staff position should be identified as an **On-site Energy Manager**. This may be part of an existing staff members overall responsibilities. This will result in successful energy management through review of utility usage, energy cost appearing as a line item on monthly business reviews and trending energy consumption to drive improvements and sustain gains. The energy manager should develop goals for improving energy performance and audit the system on a regular basis.

Are **utility bills**, when received, routed to personnel actually involved with the energy systems? Simply routing a utility bill to Accounts Payable, Purchasing, or an off-site headquarters for payment loses opportunities for analysis and improvement.

Is **energy performance data available only for the facility** (for example, from the utility bill), or have efforts been made to sub-meter energy consumption between processes or areas within the facility? It is difficult to make informed decisions in an industrial facility based on a single aggregate energy bill.

There are many power, gas, steam, and water sub-metering systems available. Applications include utility sub-metering, equipment performance monitoring, performance verification and diagnostic evaluations. The output information ranges from a simple kW and kWh data to power wave capturing in the smallest fraction of a second. State of the art metering systems can be placed at the main electric service panel, process or system panels, compressed air system panels, chiller panels, tower system panels etc. Natural gas and propane can be sub-metered both at the main service and at individual processes.



**Building an energy cultures** begins with involving all stake holders within the organization. Encouraging energy conservation should occur often until the desired behaviors are developed and then reinforced on a regular basis. Energy conservation topics can be discussed during shift huddles, employee meetings and other appropriate opportunities. "Turn off the lights please" and "Don't waste water" stickers on light switches and water faucets will result in direct savings but will help build the desired habits you want your employees to develop.

**Remember an energy consumer is most efficient when turned off.**



Nelson Teed

## ENERGY SAVING TIPS



### Shop floor heating

Once heated air rises above the heads of employees and thermostats it no longer brings value to your organization. It accumulates at the ceiling and is wasted through convection, exhaust fans or leaks. Ceiling fans can be utilized to stir this heated air into the employee work zones. Automatic controls are recommended to manage this system efficiently by monitoring temperatures and on/off control.

**Visual shop floor temperature control** can result in energy savings if managed properly. Energy Management Systems are very effective controlling this function if available. In their absence a visual and manual system can save you money. Easily read inexpensive wall thermometers placed in key locations can provide the information you need to manage your shop temperature. An operating temperature range should be established for your business and posted at the thermometers. Any employee including the plant management and energy manager can review this during trips through the shop and help manage the heaters and open doors. This information is also helpful during regular energy audits.



### Negative pressure in shop

During the transition into cool weather it is common for industry to experience negative pressure in their facility. Doors and windows are closed without proper management of exhaust fans that were used for heat removal. To prevent this assign key plant personnel on each shift to verify unwanted exhaust fans are switched off when no longer needed. Tags placed on these controls will insure that they are not inadvertently switched on without key personnel being informed.

Necessary exhaust fans and combustion blowers will create negative pressure in the shop as part of normal business. Make up air will be needed to insure equipment is not starved for air for normal operation and entrance doors are not difficult to open. Make up air can be supplied in multiple ways. Effective but expensive means are through installation of tempered air units blowing heated air into the shop. A cost effective way is to provide openings to the outside high in the shop walls. Introducing air near the ceiling allows cold outside air to enter the shop above the employees and thermostats. If this air is drawn onto the shop floor it is tempered as it passes through the warm air near the ceiling. At least a portion of the heat in this warm air from equipment and room heaters is normally not utilized once it is above the operators.

## ENVIRONMENTAL CORNER

### Aerosol Can Disposal

[http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/0C95B3D30E33CDB68525670F006BECE7/\\$file/11782.pdf](http://yosemite.epa.gov/osw/rcra.nsf/0c994248c239947e85256d090071175f/0C95B3D30E33CDB68525670F006BECE7/$file/11782.pdf)

If you handle your aerosol cans in the following way as a steel **recycle** item, you will be in compliance. **Disposal** of cans is acceptable only after use of generator knowledge and/or testing. Use a puncturing device to insure the container is empty of product and compressed gas and treat as scrap steel. Regarding the filter on the puncturing device that captures the compressed gases they are usually considered a hazardous waste and must be disposed of properly as a separate waste stream. You do have the option of using generator knowledge and/or testing to determine if they are not hazardous. Replace filter per manufacturer's recommendation.

**Universal waste is a subset of hazardous waste and includes the following categories of wastes:**

- **Mercury-containing equipment** - devices that contain elemental mercury integral to their function. Includes thermostats, but does not include batteries or lamps.
- **Pesticides** - substances that are intended for preventing or mitigating pests or intended for use as a plant regulator or defoliant. Excludes animal drugs and animal feed containing animal drugs.
- **Batteries** - devices consisting of one or more electrically connected electrochemical cells designed to receive, store and deliver electric energy. Includes nickel cadmium batteries and lead acid batteries.
- **Lamps** - bulbs or the tube portion of electric lighting devices that are specifically designed to produce radiant energy. Includes mercury vapor lamps, fluorescent bulbs, and neon lights.



### Guidance on the green tipped "environmentally friendly" lamps

<http://www.epa.gov/osw/hazard/wastetypes/universal/lamps/faqs.htm#43>

Do I need to recycle low-mercury ("green end cap") fluorescent lamps?

**EPA encourages the recycling of all mercury-containing lamps, regardless of the mercury content.**

**Note that if you do not test your low-mercury lamps and prove them non-hazardous, assume they are hazardous waste and handle them accordingly.**

Also the used lamp box needs to be closed when not adding bulbs in order to insure they are not released into the shop if broken.

The containers you collect the used lamps, batteries and any mercury containing devices require universal waste labels with the date the first unit went into it.