



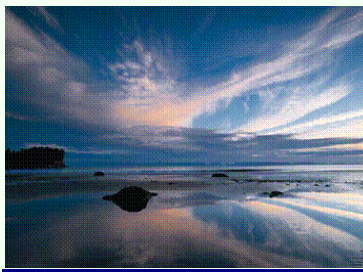
SpotLight on Maintenance

OPFMA Newsletter - Connecting Knowledge with Public Facilities' Needs!
Spring 2016

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Ohio Public Facilities Maintenance Association

OPFMA is a not for profit (501) (c) (3) independent educational trade organization



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Editor's Note:

Next Edition - **June 2016**
Publication Terms & Deadline
Submission for Materials to be Published - **June 01, 2016**

OPFMA 2016 First Quarter

Warm greetings to all in 2016!
OPFMA Board held two board meetings in this quarter: on Feb 12th 2016 hosted by TRANE Co, and on Mar 10th hosted by Crowne Plaza Hotel.
TRANE an OPFMA longtime member & supporter is much appreciated!

OPFMA educational field was reviewed and new training development visited. 2016 Conference layout & logistics talks started based on 2015 attendees' input.

Two seminars offered in this quarter:
NFPA 70E Arc Flash - Mar 9, 2016 - Cleve
Preventive Maintenance- Mar 18 -Cols

OPFMA 2016 Conference & Trade Show Oct 24 & 25

Attendees & Exhibitors Registration already started!

Exhibitors' booth - 30% already sold!

Registration Forms on our website:
www.OPFMA.ORG

Coming Seminars - registration forms also posted on our website!

May 19, 2016 –Columbus
Jun 23, 2016 -Cleveland

OPFMA New Members – Welcome Aboard!

Individual Member

- Patrick Jolly - **Geauga Co. Public Library** - Facilities Manager
- Megan Cox - **City of Kettering** - Facilities Maintenance Supervisor
- Curt Ditmars - **City of Kettering** - Facilities Maintenance Manager
- Trevor Hearn - **Warren County Commissioners** - Director of Facilities Management
- Gary Weilnau - **Erie County Commissioners** - Building & Grounds Superintendent
- Mike Wilson - **Bluffton Exempted Village Schools** - Maintenance Supervisor
- William Tyler Storey - **Scioto County Career Technical Center** - Asst Maint Supervisor
- Michael Dotson - **Georgetown Exempted Village Schools** - Maint/Custodial Supervisor
- Jack Harris - **Benton-Carroll- Salem LSD** - Maintenance

Institutional Member

City of Oregon - Ralph Burgess , Keith Henninger, Marty Zeller and Greg Emlinger

Corporate Associate Member

- Energy Planners Company LLC** – Patrick J. O'Neill – Managing Member
- Facilities Development Group** – Allan Gardner – Director of Business Development
- Allied Supply Co.** – Vickie Blakey – Director of Marketing
- Equiparts Corp.** - Dan Martino – Sales Manager
- EPCO Energy Planners Co.** – Eli Auerbach – Executive VP
- Dynamix Energy Services** – Lisa Schultz – Energy Solutions Consultant
- Spectra Contract Flooring** – Karen Kessler – Project Coordinator

Basic measures resolve bigger challenges

By Greg Lint, National Sales Manager, Service-Tech Corporation

As logic would have it, the success of tackling the more challenging tasks in your facilities depends on how well the routine ones have been handled. For example, we know you are continually challenged to **save on energy** and **improve indoor air quality (IAQ)**. The best approach to meeting these objectives is to begin with the basics -- basic cleaning and maintenance, that is.

Two areas of your facilities that largely influence energy costs and IAQ are **HVAC systems** and **cooling towers**. Nutrients, airborne dirt, and debris accumulate over time and attach themselves to components in the systems. Deposits can cause blockages and corrosion, which not only greatly reduces the operating efficiency, but can lead to significant damage and possibly failure of the system.



Spring is an ideal time for cleaning cooling towers and air cooling systems. Regularly scheduled cleaning and maintenance (at least once annually), not only results in properly functioning, more energy-efficient systems, but also ensures improved IAQ due to the removal of dirt, debris and contaminants which could be expelled through the air ducts.

Some fundamental steps to properly clean and maintain cooling towers are to:

1. Prevent sediment or algae from collecting in the water basin by flushing it out through the tower drain every two to three weeks
2. Stop scale build-up on the surface of the cooling tower
3. Clear debris from the air outlet and inlets
4. Check the pump to be sure it's working properly
5. Check the belt drive system and oil level per manufacturer specifications
6. Inspect the water distribution system and clean water nozzles frequently

Basic measures resolve bigger challenges

Continued from page 2

Disease prevention:

Another reason it is so important to properly have cooling towers serviced and cleaned is to prevent the spread of contaminants and bacteria, specifically the common bacteria *Legionella Pneumophila Bacillus* which can cause Legionnaires' disease. (All cases of the disease have been attributed to man-made environments.) Legionella, which is found in moist environments and water sources, can spread over a vast area due to drift (aerosols) carrying the bacteria from the tower. A thorough manual washout every six months is recommended to avoid all problems that can be encountered with cooling towers.



Air conditioner units; it's all about air flow

Increased air flow equates to better performance. Dirty filters, clogged coils, fouled blowers impede air flow and lead to increased energy costs.

A complete HVAC system cleaning and inspection is best, but at the very least, have the evaporator and condenser coils inspected and cleaned each spring. This can significantly improve how air flows through the coils, allowing the compressor motor to run with greater efficiency.

When exposed to unfiltered outdoor air, condenser coils can easily trap dust and debris, which raises the condensing temperature and reduces the cooling capacity. A clogged coil reduces air flow, causing the compressor motor to consume more energy.

A study conducted by Pacific Gas and Electric (PG&E) found that a dirty condenser coil can increase compressor energy consumption by 30 percent.

So by simply arranging for a good spring cleaning of these systems, you can meet the tougher challenges of saving energy and improving indoor air.

Four Essential Energy Industry Tips

By *Eli Auerbach*

EPCO Executive VP of Business Development

Today's energy industry is more complex and dynamic than ever before. It is essential that every commercial entity has an energy advisor who can provide reliable industry insight about current market conditions and information on the most effective and tested industry solutions.

As the economy continues to foster uncertainty and instability, EPCO Energy Planners is advising many clients to begin taking steps to protect themselves against a potential recession by year's end. Here are four industry tips to get you started.

1. Evaluate Existing Contracts
 - Review current and proposed equipment maintenance and service contracts. Be sure all maintenance and service agreements have significant returns on investment. Don't simply allow contracts to roll over; instead negotiate for the best terms possible.
 - Evaluate your gas and electric generation contracts. Be knowledgeable on the current state of the market. It is extremely likely there has been a dramatic shift in market conditions since your last contract. Review with your energy advisor if you are uncertain on prevailing market value or contract terms.
2. Modify Behaviors: Little Changes Can Cause Big Savings
 - Turn off ancillary office machines and lighting when not in use.
 - Shut down non-essential equipment during down-time in production.
 - Evaluate facility energy systems to remove vampire power in standby mode.
3. Institute Controls and Energy Management Systems
 - Install a comprehensive controls platform and dashboard to enable you to monitor and manage your energy systems from one device.
 - Mount sensors when possible to ensure systems such as lighting aren't in perpetual use.
 - Incorporate variable frequency drives (VFDs) on mechanical equipment to control the speed and energy output of motors.
4. Create a New Income Stream: Take advantage of the suite of utility rebates, tax incentives and financing structures that will increase your energy portfolio's return on investment.
 - Enroll in the "RIGHT" demand response program that will compensate you for curtailing energy usage at times when the grid is overly taxed.
 - Talk to your advisor about maximizing energy related tax deductions (EPAct 179D) and capitalizing on accelerated depreciation.
 - Take advantage of the many financing solutions available that provide immediate net savings for energy related projects. These are offered by many traditional banking institutions, Port Authorities, and PACE financing agencies.
5. Working with an energy advisor, instituting long term energy management plans, and making low-to-no-cost investments, will better protect your business, resources and most importantly your wallet.



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Chilled-Water Piping Condensation Control for Energy Savings and Risk Avoidance

By Richard G. Lubinski, President, Think Energy Management LLC.

Proper mechanical insulation of chilled-water piping is critical. The life-cycle cost savings and risk avoidance made possible by insulating chilled-water piping is vital to the design of a high-functioning system. Chilled-water pipe insulation is the wrong place to attempt value engineering when designing new or replacement piping. Incorrect product selection or using untrained installers can cause a building owner's life-cycle costs to increase by millions of dollars compared to the minor cost premium of correctly insulating the pipe. These mistakes can also create a liability for future chilled-water pipe replacement; in the worst-case scenario, this can even lead to a catastrophic failure of a system that will damage a building and possibly even affect its occupants.

Chilled-water piping represents about 15% of all pipes installed in the United States. The selection of the correct pipe insulation can be critical to energy consumption and potential piping damage, especially in higher humidity areas near major bodies of water. What works in the dry desert southwest obviously will not work in major cities close to the oceans, lakes, and major rivers. If you look at the U.S. map, you will note that most of the country's major cities are built near the water, for obvious reasons.

Mother Nature does not like differences in temperature, pressure, or humidity. Therefore, you can expect natural flow from an area of high humidity toward an area of low humidity. This effect is magnified if there is also a flow from medium temperature to extremely low temperature (i.e., 42° F chilled-water piping).

If the wrong insulation product is used, it can become wet due to condensation. Once wet, the insulation will lose its insulation value, waste energy, and must be removed. The problem gets worse as wet insulation is held against steel pipe. Due to gravity, the maximum insulation wetness tends to be on the bottom of the pipe. Observing condensation leaking from insulation, or wet insulation, is a symptom of a major problem below the surface of the insulation.



NIGHTMARE AMATEUR INSTALLATION Interior Hot-Water and Chilled Water Supply and Return Lines with Partial Do It Yourself (DIY) Spray-Can Insulation (Expanding Foam Contained Using an Oversized Trash Bag)

Incorrect installation creates the opportunity for condensation problems to start as soon as the insulation is installed, especially at the insulation joints. This problem is aggravated by building maintenance and mechanical contractors making "emergency repairs," or by common repairs that leave pipe insulation missing or improperly reinstalled. Thousands, if not millions, of pipes and valves, are left uninsulated in many buildings. If a mechanical contractor fails to hire a professional insulation subcontractor, then the installation is often incomplete. End-user building engineers often focus on replacement chillers, or domestic water-heating systems, and therefore overlook the issue of insulated pipes for chilled water, domestic water heating, steam piping, etc.

Building owners and specifiers should be interested in avoiding the liability of increased energy costs, mold growth, and the possibility of catastrophic failure of a building's piping systems. A relatively minor increase in the wetness of pipe insulation of, even 1%, can reduce the effectiveness of the insulation thermal efficiency by 7.5%. This statistic was confirmed by studies by ASHRAE, the Environmental Protection Agency, & the Department of Energy. Building owners and specifiers should be interested in avoiding the liability of increased energy costs, mold growth, and the possibility of catastrophic failure of a building's piping systems. A relatively minor increase in the wetness of pipe insulation of, even 1%, can reduce the effectiveness of the insulation thermal efficiency by 7.5%. This statistic was confirmed by studies by ASHRAE, the Environmental Protection Agency, & the Department of Energy.

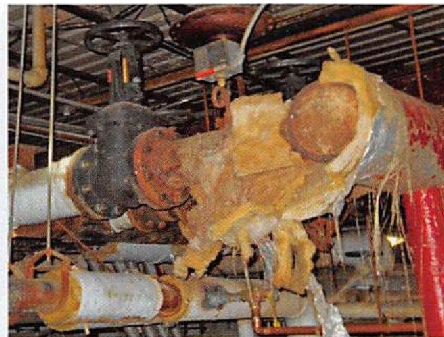
Chilled-Water Piping Condensation Control for Energy Savings and Risk Avoidance

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Water is a superior product for transmitting heat or cold, and transfers BTUs several times faster than air. Some engineering studies have shown that water will transmit heat or cold 10 to 30 times faster than room air. While water is a great delivery vehicle for heating and cooling buildings, it is often utilized based on the assumption that it is transported in properly insulated pipes. "Properly insulated" implies the selection of the right insulation product, installed per the manufacturer's instructions, and then maintained by building engineers and contractors. If any one of these steps is not followed, then one cannot expect the HVAC system and its pipes to perform as expected over the life of the building. Since central HVAC systems are expected to perform for 20, 30, 40, and even 50 years, it becomes critical that the chilled-water pipe installation is properly selected, installed, and maintained.

Infrared cameras are useful tools to look for heat loss and to identify thermal differences due to wet insulation. Infrared camera fly-overs are sometimes used to find leaking underground pipes. Infrared cameras can show images in infrared, black-and-white, or combined (combined is referred to as fusion) wet insulation in roofs and pipe insulation

OTHER INSTANCES OF IMPROPER SYSTEM DESIGN AND INSULATION INSTALLATION



Advanced infrared camera software can also show the temperatures of the pipe and equipment photographed for inclusion in reports and recommendations.

Proper chilled-water pipe insulation in new construction is also cheaper to install initially than it is to replace after the building is built. A small increase in the cost of a properly specified and installed chilled-water pipe insulation (a capital investment) is nothing compared to spending 3 or 4 times the cost to replace the incorrect pipe insulation later (an operating expense).

Another important design consideration is allowing enough space for the chilled-water pipes with the proper insulation thickness. This allowance of pipe space is important for new construction and even more important later if the pipe and insulation needs to be replaced or installed after the building is built and operating. A little extra consideration on the design makes the installed cost and life-cycle cost lower for a chilled-water piping system. Proper specification and installation of chilled-water pipe insulation is a solid investment in a building to reduce its lifetime energy costs, reduce operation and maintenance costs, and avoid future risks and even liability for all parties involved. Proper pipe insulation reduces the total cost of ownership of mechanical systems, and thereby reduces their life-cycle costs.

Editors Note:

Richard G. Lubinski is President of Think Energy Management LLC, an internationally recognized energy consulting firm with 33 years of energy-management experience. He has conducted over 1,200 ASHRAE level 1, 2, and 3 energy audits. He is also a Life Member of the Association of Energy Engineers (AEE) and serves as President of the Northern Ohio Chapter of AEE. He can be reached at rick@think-energy.net.



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2016 Board Meetings**Schedule:**Feb 11thMar 10thJune 9thSept 15thDec 6th

Board Meetings
are held
in Columbus

2016 Conference & Trade Show**Crowne Plaza Hotel:**

**Oct 24th & Oct 25th
Conference
&
Trade Show**

Conf. Committee meetingMay 12th**Oct 23th 5:00 pm**

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our website!

www.opfma.org**2016 OPFMA Board of Trustees Contact Information**

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A Note from the Editor:

Dear reader, OPFMA publishes the "SpotLight on Maintenance" for your benefit; for serving better your interests - your feedback is of a paramount importance!

Suggestions – Sharing Experiences – and Constructive Criticism are welcomed! By simply bringing in "SpotLight" topics and ideas of interest to you could be beneficial to many other readers.

Let Your Voice be Heard - Just drop a note at: editor@opfma.org or visit www.opfma.org and **click on "Contact us"** – I would be happy to bring your ideas and comments in The SpotLight!

Thank you,
Alexandra

Publication and Submission – Terms & Requirements

"Spotlight on Maintenance" is the official publication of the **Ohio Public Facilities Maintenance Association**, a 501(c) (3) not for profit organization for educational and professional development of public facilities maintenance employees.

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A special edition would be added as events dictate.

All materials published are copyrighted. SpotLight on Maintenance Editor/publisher is Alexandra Schneider.

Deadline: Articles & Photos Submission is on the 1st Day of Month of Publication.

All documents must be submitted in Word format and sent as an e-mail attachment.

All photos and Ads must be in JPEG format and sent as an e-mail attachment.

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