



**MARCH 2017**

NEWSLETTER OF THE CENTRAL ARIZONA CHAPTER OF ASHRAE

**CALENDAR**

**APRIL**

- 7 6:30 Annual Golf Tournament / TBD
- 10 4:30 Board Meeting / Radisson
- 11 11:30 Chapter Meeting / Radisson
- 18 11:30 ASPE / Aunt Chiladas

**MAY**

- 9 4:30 Board Meeting / Radisson
- 9 5:30 Chapter Meeting / Radisson
- 16 11:30 ASPE / Aunt Chiladas

**JUNE**

- (9) 7:00 Annual Chapter Awards Dinner / TBD

**SEPTEMBER**

- 12 5:30 Chapter Meeting / Radisson

**FEBRUARY TABLETOP SUCCESS!!  
RECORD ATTENDANCE**

From Kellie Huff, Chair:

Thank you for your efforts in helping to make the 2017 ASHRAE/ASPE Tabletop Product Show a resounding success! This year we enjoyed a record turnout of 142 attendees, exclusive of booth personnel, besting our 2015 record of 126 attendees. Breakdown is as follows, with engineer turnout at an all-time high.

Attendee	Count	Percentage
Engineers	67	47.18%
Contractors	25	17.61%
Reps	25	17.61%
Manufacturers	15	10.56%
Owners	4	2.82%
Other	4	2.82%
Architects	2	1.41%
Total	142	

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**BEAU TURNER**  
CHAPTER PRESIDENT 2016/17



This month's exhortation:

**THANK YOU TABLETOP STAFF!**

[bturneraz@gmail.com](mailto:bturneraz@gmail.com)



**MONTHLY ATTENDANCE SCORECARD**

- March (DOE): 38
- February (BIM): 51
- January (murder, she wrote): 57
- December (Ethics): 54
- November (Canabis): 45
- October (Data centers): 66
- September (Controls): 51

2016/17 AVG TD: 51.7

## LOOKING AHEAD:

April meeting topic:

# Combustible Dust and NFPA Standards

Joe McElvaney is back again, this time to teach us about handling combustible dust. He will discuss the NFPA standards and what you will need to look out for on your next project. NFPA standards that will be discussed are Fundamentals (652), Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities (61), Combustible Metals (484), Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids (654), Prevention of Sulfure Fires and Explosions (655), and Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities (664).

Joe is the Lead Fire Protection Engineer and Assistant to the Fire Marshal at the Phoenix Fire Department. He has a Bachelor of Science in Fire Protection & Safety Engineering Technology from Oklahoma State University and a Master of Science in Technology Degree in Fire Service Administration from ASU. He's always a very entertaining speaker and we're glad to have him back.

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### ASHRAE CERTIFICATION: BUILDING ENERGY ASSESSMENT PROFESSIONAL (BEAP)

No, it's not a Road Runner joke! The BEAP certification applies to Building Energy Assessment Professionals, skilled in auditing and analyzing residential, commercial and industrial energy use; and what to do about it. Currently, there are over 2,500 holders of this cert.

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### ASHRAE STUFF

Boss' birthday coming up? In a quandary what to buy? How about the new ASHRAE Standard 62.1 User's Manual? Just 80 bucks at a website near you. Updated to the most recent 2016 changes. New spreadsheets. Everyone loves spreadsheets.

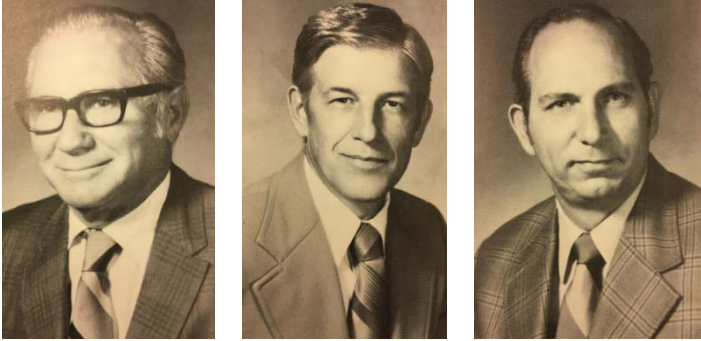
Beats the manual on anger management you got the boss last year.

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Monthly highlight\*\*: **LSW ENGINEERS**

LSW Engineers Arizona, Inc. (LSW) is a full service mechanical and electrical engineering firm with a 70-year history of providing high-quality, innovative, and energy efficient design solutions for Arizona's built environment. Since inception in 1947, the firm has undergone several name changes as new partners joined the firm. In 2000, when the last of the firm's founding partners retired, the firm name changed to what it is currently.



LSW was started in 1947 by M.M. (Larry) Lowry as a sole proprietorship under the name M.M. Lowry, Consulting Engineer. Mr. Lowry graduated in 1934 from the Georgia School of Technology with a B.S. in Electrical Engineering and worked in contracting operations and as an engineer in government service in West Virginia. Mr. Lowry moved to Arizona in 1946 and opened the firm a year later. He held registrations in 17 states and was involved in numerous industry organizations including ASHRAE, CECA, ACEA, ASPE, and NHPE.

In 1951, James P. Sorensen joined the firm: Mr. Sorensen graduated from the University of Colorado in 1947 with his B.S. in Mechanical Engineering. After serving three years in the U.S. Navy, he gained experience working with three valley architectural firms. He too was very involved with many industry organizations including ASHRAE, ACEC, ACEA, and NSPE.

In 1953, Mr. Lowry and Mr. Sorensen formed a partnership under the name of Lowry and Sorensen Engineers. In 1961, the firm started operating as a corporation under the name Lowry and Sorensen Engineering Co., Inc.

The third founding partner, Robert J. Willcoxson, joined the firm in 1962: Mr. Willcoxson earned his B.S. in Mechanical Engineering from San Diego State College in 1957. He held registrations in five states, and was a member of ACEC, ASPE, and NSPE.

In 1975 Mr. Willcoxson became a partner, which resulted in the name changing to Lowry-Sorensen-Willcoxson Engineers, Inc. In 1977, the firm opened up

a second practice in San Diego, California and the companies were renamed as Lowry-Sorensen-Willcoxson Engineers Arizona, Inc. and Lowry-Sorensen-Willcoxson Engineers California, Inc.

After 70 years in business, several of the valley's engineering firms can be traced back to LSW, including Pearson Engineering Associates, Professional Consulting Engineers, Tesco Engineering, Sequoia Engineering, Kunka Engineering, Timmerman Engineering, and Saguaro Engineering to name a few.

With well over 18,000 projects completed since its founding, the firm's design and engineering work can be seen all across Arizona. Some of the firm's notable projects include: Phoenix Sky Harbor International Airport, ASU Activities Center, Motorola, Herberger Theater, Banner University Medical Center (when it was named Good Samaritan Hospital), Mesa Arts Center, and Midwestern University.

Currently, the Phoenix office employs 48 staff, which includes 15 Professional Engineers (PE's), three Engineers-in-Training (EIT's), a Registered Communication Distribution Designer (RCDD), six LEED Accredited Professionals (AP's), a Certified Energy Auditor, and two full-time field observers. The San Diego practice employs 11 staff, which includes three PE's, two EIT's, two LEED AP's, and one Energy Manager-in-Training. The firm has continued to thrive and remains committed to providing their staff with personal and professional development opportunities and a great work environment.

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\*In the soul of every Editor lurks a hyperbolist

\*\*We invite the submission of industry histories, and will honor the earliest firms first. The criteria, in addition to time, is "firms still in business". As the series continues, we may solicit deeper histories. Of particular interest is how our local industry was formed from the branching of veterans into new firms. This column welcomes input from engineering, equipment and contracting firms.

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#### ASPE STUFF

Southwestern Ohio ASPE President Ron Bartley, PE, has circulated a proposal for NCEES to establish a category of "Plumbing Engineer". There has been some discussion among participants locally (AZ). For those seeking more information, contact [rbartley@sfa-architects.com](mailto:rbartley@sfa-architects.com).

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## TECHNICAL NOTE:

### GETTING THE MOST OUT OF YOUR HYDRONIC PIC VALVES DURING START-UP

-Gabe Millican, PE

President, Millican Engineering LLC

There is no question that pressure independent control (PIC) valves are gaining traction as the balancing method of choice in hydronic systems. Because a PIC valve encompasses both the method of control and method of balancing within a single unit, the installation time is reduced. Because they are pressure independent, the valve can be easily adjusted (usually with common hand tools) without the need for an iterative hydronic balancing process, reducing start up time.

PIC valves are known to provide long term advantages, I'd like to focus on short term advantages they can offer during the start-up process.

Typically the test and balance (TAB) process occurs near the end or even after the central plant start-up process. Control system programming and turning also tends to occur late in the start-up process. This leads to a plant that is being started up with little to no control. What control algorithms that are in place are likely un-tuned, underdamped, or undergoing changes.

So what can we do? Once small aspect we can control is the PIC valve. Let's not wait until the bitter end of the process to finally turn that knob and set that valve. Why can't we do that upon installation?

What would happen if the PIC valve was set upon installation? Most PIC valves on the market today have either a percentage scale or flow scale printed onto the valve. It should be as simple as merely looking at the engineered plans (or submittal) to understand the flow requirements and then locking in that knob to the required flow? With this procedure you have just set the maximum flow thru each valve and thus the entire system. You have just added a small bit of control to the system and have an accurate maximum flow set in the system.

A benefit of this is that chillers, pumps, by-pass valves, etc will see a somewhat accurate flowrate during start-up. This can mitigate constant valve cycling, VFD cycling, chiller cycling that might be common during start up.

If it's so easy, why do we wait until the end? It seems that while the valve technology has improved, our installation process has not caught up. We still have the

same mentality that the valve will be set during the typical TAB process. Let's coordinate with the mechanical contractor, controls contractor, and test and balance agent who will be setting the valves and at what point in the process.

A claimed advantage of the PIC valve is how easily they are set, once and done. Coordinate to get those valves set early in the process and prevent your plant from being wildly out of control during that start up process.

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GREAT SHOW THIS YEAR! SEE YOU NEXT YR!



Pete Menconi, PE  
Editor

ALL SUGGESTIONS ACCEPTED AT  
[PMENCONIENGINEER@GMAIL.COM](mailto:PMENCONIENGINEER@GMAIL.COM)

And while all suggestions are accepted, Management reserves the right to disregard them at whim.