

## SERVICE CALLS

# Humidification Systems: Maintenance is the Key



When MSC responded to an emergency no-cooling call, airflow and chilled water temps were found to be operating to design. A check of pneumatic 3-way chilled water valves on several AHUs showed they were malfunctioning. Chilled water was bypassing the coil because there was insufficient air pressure to drive the valves. We traced the half-inch pneumatic line several hundred feet and found where it had been crushed during recent work.



An R&D facility noticed warm temperatures in a walk-in cooler and placed an emergency call to MSC. Our service technician quickly determined that a condenser water pump feeding a DX heat exchanger had accidentally been turned off. The next question was, why hadn't alarms been activated when temperatures rose? Our investigation revealed that the original installer had terminated the alarms on the wrong points and the alarm system had never been commissioned.



Humidification systems are becoming increasingly popular in both the home and workplace, providing numerous health, comfort, productivity, and energy-saving benefits. In some environments such as healthcare facilities, data centers, laboratories, R&D, compound pharmacies, etc., proper humidity control is an absolute necessity.

There is a very common misconception among users, however, that humidification systems are somewhat elementary and require little maintenance. In truth, they require expert selection, design, and installation, followed by regular, meticulous preventive maintenance, to ensure optimal performance and efficiency. Manufacturer main-

tenance requirements can vary depending on system type and application, and it's important that these standards are closely followed.

Supply water quality, treatment and filtration are key to operating a clean, efficient system, whether it derives humidity from steam or cold water. Minerals in untreated water can clog heat exchangers, nozzles, and wetted pads in isothermal (steam) systems, and adiabatic (unheated) systems emit these impurities into the air, which settle on surfaces and processes and can cause health problems when inhaled. Using deionized (DI) or reverse-osmosis (RO) filtered water will virtually eliminate these issues. Water should be monitored and tested regularly for quality, and standard PM practices should include inspection of filters, membranes, and TDS to keep critical supply water up to humidification system standards.



Instrumentation and controls must be checked and calibrated on a regular basis. This includes verifying that humidity and temperature sensors are reading accurately, checking control valve operation from 0-100%, and ensuring high-limit humidistats are set and operating properly. MSC recommends high limits be hard-wired as opposed to controlled via a software point. Building personnel must ensure that humidification systems are not operated outside design parameters. For example, setting a system to deliver RH levels higher than it is designed to maintain can affect absorption distance, resulting in condensation in ductwork and wet diffusers.

MSC is expert in design, installation, maintenance, troubleshooting and repair of all types of humidification systems including boiler steam, clean steam, canister steam, centrifugal, ultrasonic, atomized, and more. For more information, contact us at (973) 884-5000.

## BENEFITS OF RETRO-COMMISSIONING AND RECOMMISSIONING



Retro-commissioning, sometimes known as recommissioning, is the application of the commissioning process to existing buildings to improve how mechanical, electrical and controls systems function interactively and enhance overall building performance. MSC is a **NEBB-certified Building Systems Commissioning (BSC) contractor** with a team of engineers and technicians capable of identifying and resolving even the most challenging commissioning and retro-commissioning problems

The ultimate goal of retro-commissioning is to ensure that building systems are meeting the unique needs of occupants

while operating as efficiently as possible. It can resolve problems that occurred during design or construction, or address problems that have developed over time. This is especially common in facilities that have undergone renovation or changes in how interior spaces are utilized. With today's highly-integrated control systems, small problems can trickle down and significantly affect overall building performance. Time takes a toll, as well. Even well-constructed and properly-maintained building systems will experience performance degradation over time.

Retro-commissioning provides a wide array of benefits, including typical savings of 10-20% in total energy costs. Other benefits are improvements to equipment performance, system manageability, documentation and staff training, and IAQ. Most of these improvements can be done inexpensively along the way, and many can be achieved through controls changes alone. For more information on retro-commissioning, please call MSC at (973) 884-5000.

## HVAC Tech is a Good Career. Now We Just Have to Convince People

Last month, a \$1.2 trillion infrastructure bill was signed into law that is expected to add two million jobs per year – mostly in the construction industry – over the next decade. But with a **years-long shortage of skilled workers compounded by the pandemic**, these jobs will be very difficult to fill without some profound changes.

One of the main reasons for the skilled labor shortage is the singular focus placed over the past few decades on obtaining a college degree. Students are steered overwhelmingly toward college programs and away from trade schools, and this has resulted in an **undeserved stigma on skilled trade jobs and a hollowing-out of the midlevel workforce**. If we're to reverse this trend, parents and educators need to start promoting skilled trade jobs for what they are: viable careers offering good pay, abundant opportunities, and freedom from crippling student debt.



Another issue contributing to the skilled labor shortage is lack of diversity. Of the nearly 11 million people employed in the construction industry, nearly 90% are white and only 11% are women. **Attracting more workers from underrepresented groups** will require strengthening training initiatives and increasing recruitment efforts in schools and communities.

These problems can't be solved overnight, of course, but with pandemic-related labor shortages dominating the news for the past year, perhaps there's reason to hope. The public's increased awareness regarding the job market, if combined with destigmatizing and diversifying skilled trade careers paths, might mean there's a possibility we can begin to turn this trend around someday soon.

## Mike Roberto Retires After 40 Years of Service

The last time Mechanical Service Corporation owner Harry Hartigan answered to a boss, the year was 1975. Who was that boss? None other than Mike Roberto, who recently retired from MSC after forty years of dedicated service.

Mike Roberto's first job after graduating from high school in 1964 and earning a certificate in electro-mechanical drafting was on the chiller assembly line at Edwards Engineering, a now-defunct HVAC equipment manufacturer. He had applied for a drafting job at Edwards, but the war in Vietnam was heating up and they thought it likely that 18-year-old Mike would be drafted within the next six months, so they offered him the production job instead. In 1966, after working a little over a year for Edwards, Mike joined the Army. Oddly, the prediction about his being drafted had been correct. Upon returning home from the recruiter's office after enlisting, Mike opened his mailbox to find his draft notice. Edwards Engineering agreed to hold his job while he served our country in Vietnam, and by 1969 Mike was back on the assembly line building chillers.

Soon after Mike's return, he was promoted by Edwards to draftsman and began doing quotes for heating and cooling systems. One day, when the air conditioning system in the office began acting up, a manager who knew Mike had worked in the chiller department asked him to check out the unit to see if he could figure out the problem – which Mike promptly did. He'd found his calling and began working as a refrigeration service technician.

In 1975, Edwards Engineering sent Mike to Texas for eight months to rebuild a vapor recovery unit. He'd been the only refrigeration service tech when he left, but by the time he returned to New Jersey, Edwards had built an entire service team. Soon after, Mike was tapped to manage the department. One of the service technicians on his new team was a young man named Harry Hartigan.

Harry left Edwards Engineering in 1976 to start his own business, and the two men remained friends. Mike regularly referred customers in need of out-of-warranty service to Hartigan Refrigeration (as MSC was previously known), and in turn, Harry was always asking Mike if he would consider coming to work for him. Mike's answer was always, "you can't afford me". Harry, however, was determined to have Mike on his team, and in 1980 he made a formal job offer that Edwards Engineering couldn't even come close to matching.



"The rest", Mike says, "is history".

Over the next forty years, Mike served as one of MSC's most valued and talented employees, working as first as Refrigeration Service Technician and eventually as Project Manager. Most recently, he spent three years at Fort Detrick, Maryland, on an ongoing project at USAMRIID (U.S. Army Medical Research Institute of Infectious Diseases) serving as MSC's in-house expert in pneumatics.

Thank you, Mike Roberto, for forty years of friendship and exemplary service. We wish you all the best in your retirement with your "two favorite girls", wife Trudy and granddaughter Leighton, aka Lulu.



[The MSG Andrew Marckesano Suicide Prevention Fund](#) (#AndysFund) is a [Green Beret Foundation](#) initiative that earmarks funds specifically for the mental health care needs of Green Berets not covered by military healthcare and other benefits.

In honor of Maj. Brian C. Hartigan (1984-2020), MSC respectfully asks you to **join us this holiday season in supporting #AndysFund** to help help provide access to all necessary avenues of mental health treatment and care so Green Berets and their families can enjoy meaningful, fulfilling lives free from the shadow of suicide. GBF holds a [4-out-of-four star rating from Charity Navigator](#).



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