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It is interesting writing an article during these times. What mode do we operate in presently: survival mode, fear, positive expectations? When the ability to decide what we can and cannot do in a free market society is taken away by someone else’s decisions, how can we respond? In these times for us in the construction industry, reducing the ability of our workers to move from place to place and man jobs is like taking away someone’s survival raft in the middle of the ocean. I find it hard to discuss technical topics, future NEBB meetings and conferences when we just don't know....... 

I want to encourage you that we will make it through this, we will press on and go back to work and back into society but it will take resolve and confidence and the use of common sense. There have not been such unsure times that lack so much definition of what actual results will bring resolve ever during our lifetime. We know that Covid-19 will never disappear and we know that even the best solutions we have ever had available to battle viruses only work for a percent of the population and can be rendered useless due to mutation of the virus. We must find the solution together as a people and not wait for it to be delivered to us by the government and the media. Whatever course the current crisis takes, hard times lie ahead for the industry. Surviving in the daily struggle is essential, of course, and a matter of first priority. Continuing to build the next generation of our workforce is still as essential as ever. But companies should make sure that they do not focus on current problems at the expense of preparing for the future. The Covid-19 crisis will pass, while the challenges that the industry has faced in recent years will continue. Planning long term and having a clear target vision for the future will ensure that companies lay the strategic foundations for life after the virus. 

From my family to yours, praying for all those you care for.

Jason Huffman
NorCal Hawaii NEBB Chapter President.
Northern California/Hawaii Chapter

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Recently we were asked to survey a building’s cooling system that serves a data center and the comfort conditioning for office space within the building. System performance was determined to be less than anticipated in design. In particular, the piping loop water flow was not adequate to achieve the maximum required cooling for the server racks. The owner was basing their conclusions on data obtained from their BAS system and the installed gauges at the pumps, heat exchanger and cooling towers.

The building has a 11,500 sq. ft. high-performance equipment floor with water-cooled equipment racks, which are served by the cooling water piping distribution system in its raised floor space. The building also has a 7,600 sq. ft. common area that has office and conference rooms served by water cooling coil air handlers in the basement.

Cooling water is produced by the secondary side of a heat exchanger, which is served by cooling towers. Cooling water distribution is done by a piping system and pumps in the basement.

Both the cooling tower and conditioning system have two designated pumps that are designed for 4,375 GPM each. The design intent is for only one pump on each side of the heat exchanger to run at a time. The operators were actually running two pumps simultaneously, but at lower RPM to handle the air handlers and server racks, because they assumed they didn’t have adequate water flow.

We performed a dead-head test for each pump to verify the impeller size, then tested each individual pump at 60HZ to measure total GPM as plotted on the pump curve. We also tested at the triple-duty valve and with an ultrasonic meter located on the main supply pipe. Our calibrated instruments readings indicated the installed gauges and the BAS system were not indicating accurate values.

Our tests concluded that the BAS System and the installed gauges were both out of calibration which gave the owners false data. The cooling loop BAS system was measuring 3,591 GPM and the actual flow was 4,300 GPM. The tower loop BAS was measuring 1,641 GPM, while the actual flow was 4,200
GPM. These readings were cross-checked between the pump curve, triple-duty valve and ultrasonic meter. All three measurements were within five percent of each other.

We recommended that the gauges on the pumps be changed to calibrated gauges for more reliable and accurate readings. We also assisted the owner in calibrating their BAS System for future use.

At the time of the test, the condition of the floors was impacted due to the data floors being built out slightly more than the originally designed heat load and unseasonably warm weather. The owner used our findings to conclude that added cooling would be needed for the existing heat load and any additional build out in the future, and also hired us to ensure that the added equipment is properly balanced and calibrated.

About the Author

Sebastian Maceira started in the TAB Industry in 1983, working at AirMetrics Inc. from 1983 to 2012, moving through the ranks from apprentice to eventual ownership. He was a teacher for the Local 104 union training center for 14 years. He presently serves on the technical committee. Sebastian manages the technical training and onsite quality control for the California branch of Pacific Test and Balance, Inc. Sebastian is NEBB, TABB and AABC certified.

If you are interested in having a technical article published in our Quarterly Chapter Newsletter, please contact the Chapter at: akearns@nocalhawaiinebb.org.

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NEBB is pleased to announce that changes to the Approved Instrument Requirements Lists will make the recertification process easier for both firms and Chapter Technical Committees alike.

Please note: While the lists indicate an effective date of January 1, 2021, those who are currently working on their recertification must adhere to these new requirements.

While most of the changes in the instrumentation reflect minor "tweaks," a few major modifications affect either a specific discipline or more than one discipline. Sound has been updated to include a new Appendix A.

In addition, Certelligence instrument lists (pull-down menus) have been updated to include approved instruments in each of the categories. While the lists are updated periodically and are extensive, they are not all-inclusive and may not contain all instrumentation that meet the requirements. Any instrument not on the list but meeting the conditions of the specific standard requirements should be added as "other" along with data specifications in the documentation/photo upload for review by the chapter.
WHAT IT IS

Mandated by the California Energy Commission, the Title 24 program states that only a mechanical Acceptance Test Technician (ATT) certified by a Certification Provider may perform testing for HVAC systems and controls when the mechanical equipment is required to meet specific energy efficient processes. This Building Energy Efficiency Standard applies to all newly constructed buildings, additions, and alterations.

Technicians have been required to perform acceptance testing for nonresidential buildings since the enforcement of the 2005 Building Energy Efficiency Standards, and have had the opportunity to become trained and certified in performing and documenting acceptance testing for lighting controls and mechanical systems for nonresidential buildings since 2013.

WHY IT MATTERS

1. Once an Employer is Certified and has Certified Technicians, they may perform Title 24 testing for the forms in which they are Certified, meaning greater opportunities and potential works.

2. Technicians that are not certified when the final date is announced will no longer be able to download the forms for completion. Inspectors will refuse all Non-Certified forms, in turn, holding up the final permitting process which is essential to building turnover and end-user occupation.

3. Contractors that cannot submit Certified forms and are found to be holding up the Temporary Certificate of Occupancy can also face costly contract fees.

301. 977.3698  www.nebb.com
Did you know that NEBB announced changes to the Approved Instrument Requirements? Go onto www.nebb.org and check out the new Instrument Requirements under Resources.

How often do you go thru recertification?

Recertification takes place every 2 years. Do you know when you are due?

If you didn’t know, then you need to get more familiar with your NEBB operational procedures manual.
NEBB WEBINARS AND EDUCATIONAL SEMINARS

ALL NEBB SEMINARS HAVE BEEN CANCELLED!!

UNTIL 2021

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