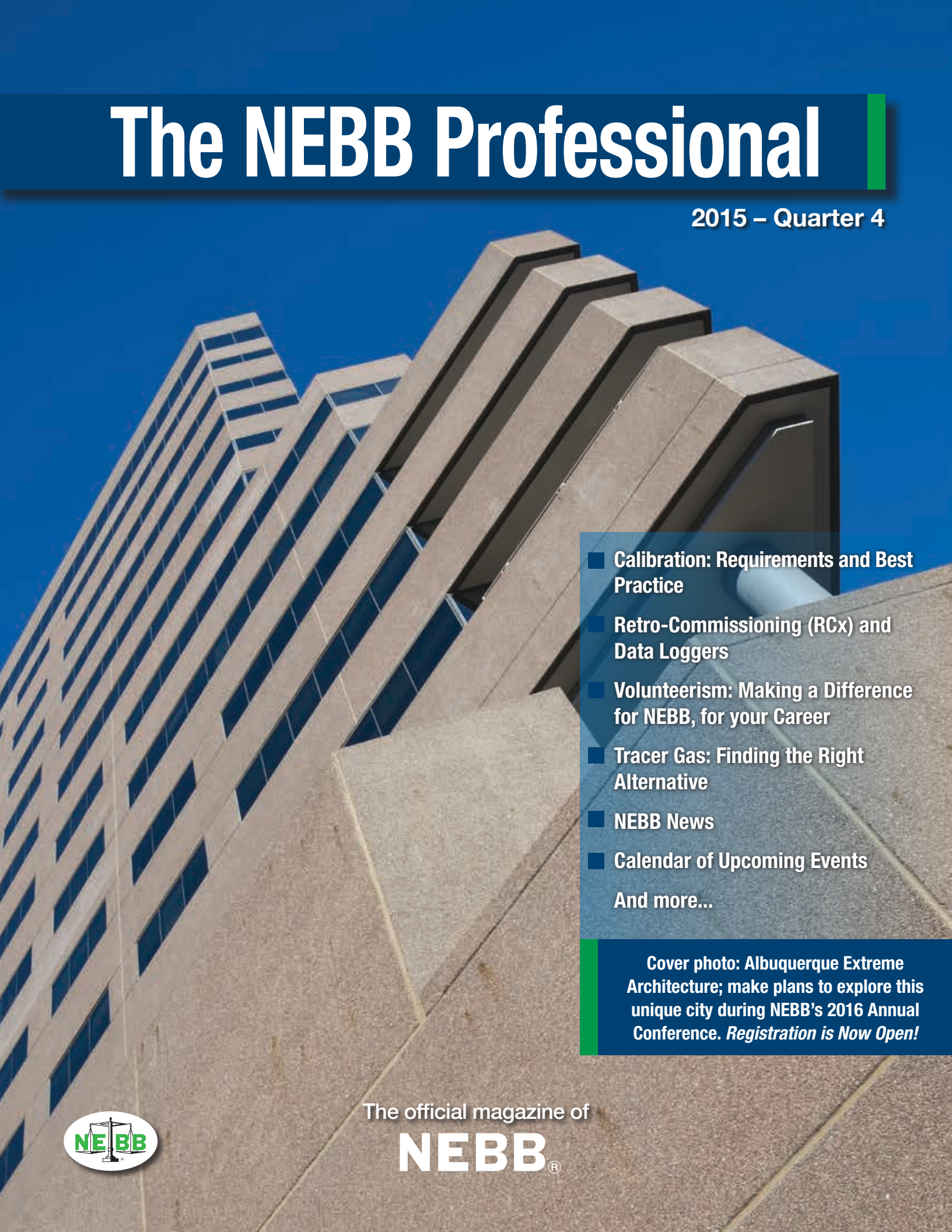
The NEBB Professional

2015 – Quarter 4



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And more...

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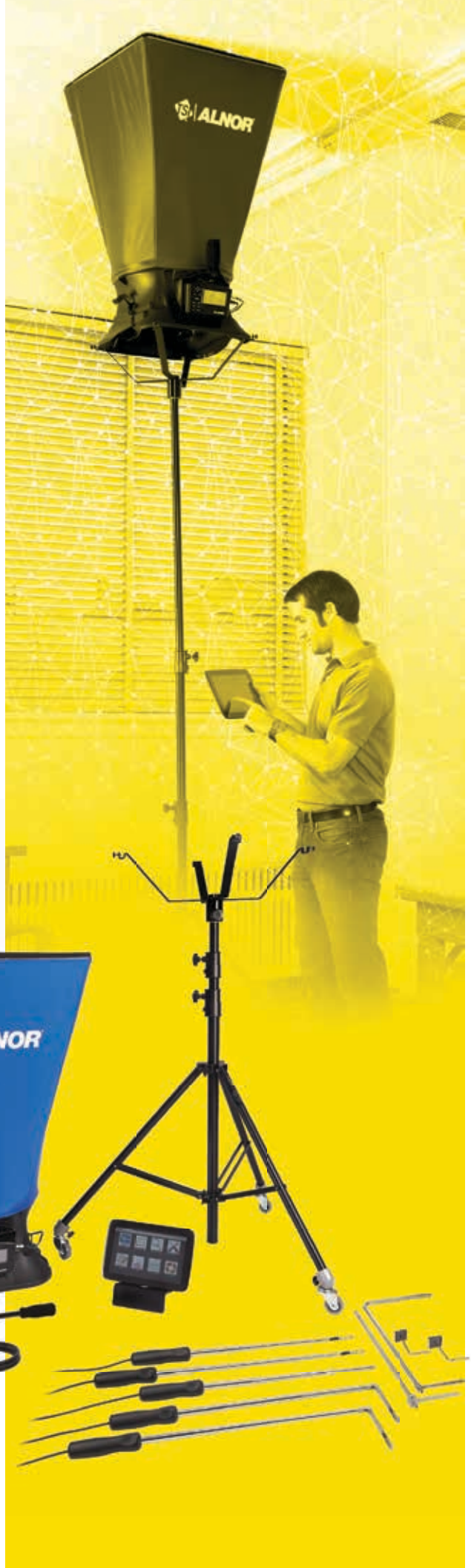

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UNDERSTANDING, ACCELERATED

The NEBB Professional

2015 – Quarter 4

Index of Articles

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Cheryl Gendron, Editor | 8575 Grovemont Circle, Gaithersburg, MD 20877
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President's Message
NEBB: Rich History, Bright Future

Dear Colleagues, Friends, Ladies and Gentlemen:

It is a great honor and privilege for me to serve as the 2016 NEBB President.

I would like to thank the NEBB Board of Directors members for their confidence in electing me to this position. It is with great humility that I will serve NEBB for 2016.

NEBB plays a critical role in addressing building performance through its various disciplines, certifications and procedural standards. As President, I commit to provide the leadership NEBB requires to achieve its objectives and implement its strategies. I commit to listen and respond to your needs, and work very closely with the NEBB Board to maintain our leadership position.

NEBB technical disciplines are highly specified in the industry. Considering that NEBB was started in 1971, I would say that in a relatively short time we have become leaders in each of the disciplines. This reflects that the services our firms provide are very much in demand. It also shows that the diversity of various discipline work we provide under the NEBB umbrella has been a successful strategy for the organization and its certified firms.

Those who have steered NEBB along this dynamic road have done so in a market driven and measured way, ensuring appropriate response to industry needs and thereby ensuring the continuity of NEBB. Many people have contributed to this outcome, including all our past presidents and most and above all, our generous volunteers who are dedicated to this organization. Without them, NEBB would not exist. They must be recognized, and I take this opportunity to express my profound gratitude to their endless hours of work and dedication.

I believe the essence of what we do at NEBB is to create excellent certification programs and training that enhance commercial building energy efficiency and performance in societies, economies and the global environment. Energy efficiency will assist both developed and developing countries to pursue sustainable development objectives, and it will ensure better use of natural resources. This coming year will be an exciting year for the industry growth, which will be enhanced by innovation.

Therefore, I would like us all to consider as a theme for 2016 ***Enhancing Building Performance through Innovation.***

ANSI accreditation for personnel certification programs is part of NEBB's long-term strategic plan. It is important to keep this goal at the forefront so that we achieve adherence to this demanding process, and thereby maintain and enhance our leadership position in the industry. In this regard, 2016 will mark a milestone in this process and our strategic plan.

NEBB is committed to success in the ANSI challenge. To my mind we have the best team in place to attain our goals, including both volunteers and the personnel working in our headquarters office under the supervision of NEBB Executive Vice President, Glenn Fellman. Together we will keep NEBB in its leadership position!

NEBB is fortunate to have an amazing group of volunteers who work countless hours to improve each discipline upon which the organization is based. I intend to work very closely with our various discipline

committee chairs to help them with their demanding agendas. I also commit to work very closely with our Board and our headquarters staff to make sure we all share the same bright vision for the future of our organization.

NEBB is a relatively young organization but it has a ***Rich History and a Bright Future***.

I am very proud to be part of NEBB's wonderful and very exciting team. Let's all work together for the best interests of NEBB!

Sincerely,

Jean-Paul Leblanc,
NEBB President

Message from the NEBB EVP
Chapters: Vital to NEBB

Earlier this year I was speaking with a NEBB Certified Professional about his experiences with the organization. He was so proud to tell me his NEBB membership began more than 20 years ago that I didn't have the heart to tell him he was wrong.

NEBB does not have members, nor is it a typical trade association – NEBB is a certifying body.

NEBB Chapters have members. Chapters are a key component to NEBB and its success. Chapters provide a local or regional forum where the community of professionals in NEBB disciplines gather to network, learn and work for the betterment of their industry. Chapters are where grassroots efforts happen to improve the business environment for Certified Firms and professionals.

Historically, chapters have played a unique and vital role for NEBB. While NEBB has changed many of its processes and procedures over the last year, one thing that hasn't changed is the importance to NEBB to have a strong, vibrant network of chapters.

Some of the most critical functions to NEBB's overall success are the responsibility and authority of NEBB Chapters. Let's look at just a few.

Firm Recertification

Every two years, a NEBB Certified Firm must apply for certification renewal. The application process includes many steps, one of the most important of which is the certification that a firm has the requisite instruments, properly calibrated, to perform work in the discipline(s) under which it is certified. Chapters play a vital role in firm recertification by carefully reviewing and approving all elements associated with the application process – that process is a hallmark of NEBB and one that elevates the stature of the organization to the highest level of integrity and quality.

Education

Each NEBB Chapter conducts or sponsors seminars or refresher courses at least annually. This provides a high quality, local source of discipline-specific education for NEBB Certified Professionals and NEBB Certified Technicians that help them fulfill their NEBB continuing education requirements.

For a firm to remain NEBB certified, at least one employee in a management position, preferably the Designated Certification Professional, must attend a NEBB Chapter recertification seminar annually. In this way, chapters serve a vital role in making sure firms are aware of changes to procedural standards, NEBB governing documents, rules and requirements.

Compliance

NEBB prides itself on having the most qualified, technically adept firms in the world. But once in a while, a firm falls short of meeting its obligations. When such issues arise, NEBB Chapters are a critical partner in conducting objective investigations related to compliance with applicable NEBB Procedural Standards and/or NEBB Operational Procedures.

When a NEBB Certified Firm is determined to be having difficulties complying with NEBB Procedural Standards, an "Administrative Action" is often taken in cooperation with the firm's chapter. Administrative Actions can take a variety of forms, including mentoring, review and comment of reports, and other means to assist the firm in achieving compliance. Chapters play a key role in Administrative Actions, working to help their member companies demonstrate understanding of Procedural Standards and their application in the workplace.

Quality Assurance

The NEBB Quality Assurance Program (QAP) gives owners confidence that when hiring a NEBB Certified Firm, they have the backing of the organization in the unlikely event that things don't go according to plan. At any given moment, a NEBB Chapter may be called upon to undertake and discharge investigatory work pursuant to the QAP program in a very timely, accurate and thorough manner. The QAP program is one of the most important safeguards NEBB offers to the customers of Certified Firms, and the program could not be successful without NEBB Chapters.

If NEBB Chapters are the engine that makes NEBB run, then their members are the fuel that makes those engines rev so fast and efficiently. Very few NEBB Chapters have paid staff. Nearly all of the work performed by chapters comes from volunteers – the members of the chapters undertake all of the responsibilities I described in this article. That's an astounding amount of work and NEBB is very fortunate to have such an incredibly dedicated and talented network of professionals throughout the world!

To be NEBB certified, a firm must belong to its local chapter. This requirement ensures that chapters remain vibrant and well-supported with dues, volunteers and technical subject matter experts.

As you can see, NEBB Chapters are a key element in the formula for NEBB's overall success. Please support your chapter by attending recertification seminars and chapter business meetings, by paying your annual chapter dues, and perhaps most importantly, by volunteering to serve on a chapter committee.

Glenn Fellman,
NEBB Executive Vice President

Calibration: Requirements and Best Practice

Jim Peacock | E & E Process Instrumentation
Steve Clark | Chairman, NEBB TAB Committee

Why do we calibrate instrumentation? Because in the long run it saves you money and time and keeps you looking the professional you are. If you use instrumentation that is out of calibration you run the risk of having to redo the readings you have taken or worse yet, having to explain to a customer why your readings cannot be repeated. If you are troubleshooting, the right answer cannot be obtained from a bad reading. Out-of-calibration instruments leads to lost time and quite possibly, a lost customer.

The following will cover some of the basic requirements that will prevent erroneous questions about your instrumentation calibrations, provide your customers with confidence, and an provide them an understanding of the requirements for good calibration procedures to keep your instrumentation precise and accurate. This removes any doubts about the results obtained and reported.

The first questions are always how often and how long ago your instruments were calibrated. The answer to these questions should be simple. It is, at a minimum, dictated by the Procedural Standard for the discipline engaged, or by the customer with which your contract is with, whichever is greater. Most manufacturers suggest yearly calibration, which coincides with the NEBB Procedural Standard. Manufacturer recommended calibration frequency can usually be found in the instrument manual. This may be superseded by contractual obligations should they prove greater. Some customers require calibration before and after the job to prove the instrumentation is still within specifications. One of the most important calibrations is the first calibration after a period of time for a new instrument; this is when, if there is going to be any drift, it will present itself.

When the time arises that your instrumentation is ready for calibration, the first thing you need to verify is the NEBB Procedural Standard to ensure the instrument meets the required specifications. You also need to let your calibration supplier know what specifications you are trying to obtain, the manufacturer's specification, the NEBB specification and/or additional specifications within your contract guidelines.

One of the first questions to ask the calibration supplier is, are their instrument standards all traceable to a NIST Standard? The NIST Standard is the instrument that is the standard measurement for North America. Most Calibration labs suggest that the standard being used to calibrate your instrument should be 4 times more accurate than the instrument being calibrated. The other question about your supplier's standard is, when is it due for calibration? Other information to obtain would be: are they ISO registered or accredited? This means, do they have a quality control system in place, so you can be assured of a quality calibration?

So now we know the calibration supplier has NIST traceable standards that are not out of date and has better accuracy than your instruments. Now we need him or her to test or calibrate yours. What readings are necessary? A minimum, three or four points, or greater is better. Good instrumentation calibration practice is a reading at or near the bottom of the

range for the instrument being calibrated, at lower mid point of range, at a higher mid point of range and at 90% to full scale of range. By taking four reading this gives a good indication of the instruments accuracy over its entire range. Remember a stopped clock is still right twice a day. A one or two point calibration is very similar to a stopped clock and it may not tell you the truth.

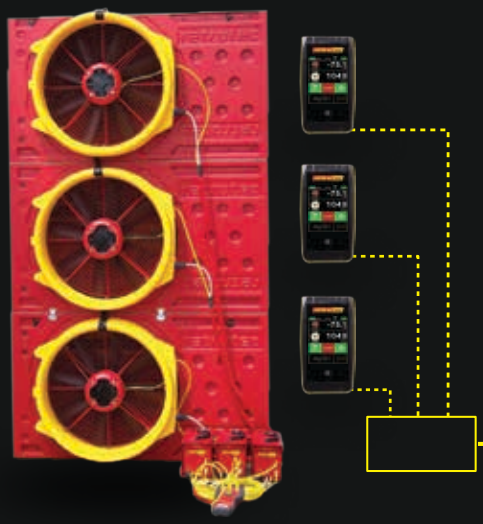
When the above steps have been completed and the instrument is within specifications, we now have a properly calibrated instrument. The next step is a Certificate of Calibration to go along with the instrument. The essential elements of a calibration certificate will show your customer that you are using trusted, accurate instrumentation and reducing the need to question your reading.

The Calibration Certificate should list information such as description of the instrument (pressure gauge or digital thermometer etc.), model number, serial number range of the instrument and the accuracy or tolerance specification. This data shows what instrument goes with that certificate. The certificate should also indicate the calibration lab, environmental conditions when it was calibrated, the date it was calibrated and the NIST Standard used to calibrate it. The NIST Standard should also have a model number, serial number, traceability number to a NIST Standard, along with a recall date. The other item required is a table of results of the calibration showing the readings of your instrument compared to the NIST standard used and a statement claiming the instrument was IN TOLERANCE.

Knowing these steps and having all the above information on your Calibration Certificate will greatly reduce the stress, downtime and quite possibly, loss of income due to calibration deficiencies. ■

Air Leakage Measurement

...from the experts



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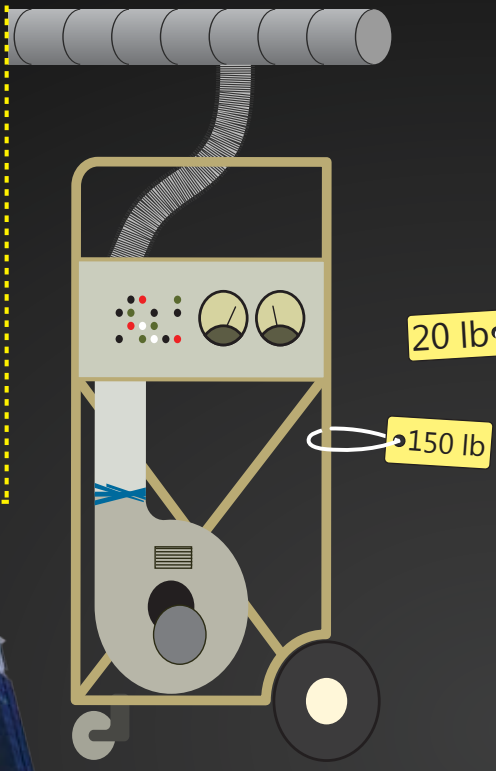

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NEBB Professional Column for Commissioners

Produced by the BSC Commissioning Committee | James Bochat, NEBB TAB, Cx, RCx, BET

Retro-Commissioning (RCx) and Data Loggers

During our training seminars I am continuously asked "Why does our standard require the use of data loggers and why do we have to own data loggers? Can't we just use the control system to provide this information?" The answer is yes, you can use the control system but it is more difficult, takes more time and costs more. We generally don't use the control system at the beginning of the commissioning process, we use data loggers. We do use the control system later on when we are trending for functional testing.

Let's step back and review the NEBB Technical RCx Process.

The basic major steps of Technical RCx are as follows:

1. Document review and preliminary energy use and water use audit
2. Discovery Process
    a. System Assessment
    b. Interviews
    c. System Testing
    d. Quick Fixes
3. System Improvements and Optimization
4. Major Corrections

The trick to Retro-Commissioning is finding which systems are not working correctly so you can provide further testing to find the root cause of the discovered issues. To this end, you could test every system but the costs to do so might be higher than most customers are willing to pay. We have developed a process that will allow you to discover the systems that are not meeting the owner's current facilities requirements (CFR). This process is to place and launch data loggers in each zone, perform a system assessment inspection on each piece of equipment and system, perform interviews and perform point to point testing on the entire control system. From these activities you will find the systems that are not performing in accordance with the CFR and those are the systems you will test and investigate for corrections.

I already know what you are going to say: if we are performing a point to point test, why can't we just use the control system for the space data logs.

The main reasons are:

1. Most control systems have only the space temperature and do not have space humidity and lighting level as control points. This is the data we want to determine if the system is truly performing as required. Humidity is a very important piece of information that tells us how the AHU or AC unit is truly performing. The lighting level tells us if the lights are being controlled, either by a wall switch or by a system and how often they are on.
2. The data logger may be more accurate and more stable than the control system.
3. The data logger parameters cannot be changed or overridden by an operator or occupant.

4. Sometimes you may want to keep the data loggers in place as you are adjusting and improving systems performance to show results of the adjustments.

Once we have identified what systems we are going to target, we then perform in-depth tests to discover the true root cause of the poor performance. These tests may include TAB readings, control system data trends and energy and water use analysis.

Many commissioners are using data loggers that have room temperature, room humidity and space lighting level all in on one instrument, which keeps the cost and complexity of the initial data logging efforts as low as possible. The data logger shown is from Onset but other manufacturers can provide similar loggers. This particular logger has one onboard temperature sensor, one onboard humidity sensor, one lighting level sensor, and two external jacks for other readings.

Our RCx standard requires that each commissioning firm own a minimum of eight data loggers to perform these functions. In reality, having a quantity of eight loggers is not enough to do a project. Most firms own 40, 50, or hundreds of these loggers, depending upon the size of the projects you normally perform. It is possible to move the data loggers around but since you need at least 15 days of data this can lengthen the project schedule considerably which may be a problem if you are in a remote location.

You will also need specialty loggers to log data that is not available from the DDC system and those are air and water pressure sensors, temperature sensors or other specialty sensors. This can be done by purchasing specialty data loggers, such as the Dickson water pressure data logger shown, which can be piped as a pressure sensor or a differential pressure sensor.

When we need to data log something that does not have a low cost data logger available, we will hook a sensor into a data logger to log the measured variable. This is true for air pressure, electrical current or power, CO, CO2 and other measurement sensors. The things you need to be careful about are having the correct output signal for the data logger, and verifying if the data logger can power the sensor or if you need to have a separate power supply. The sensor shown is a multi-range air pressure Veris analogue sensor hooked into a logger. This is one of the sensors that Onset has a special cable with the correct resister to match the connected sensor to the correct scale of the data logger.

In general, the cost effectiveness of using data loggers goes down the more complex the system you are logging. For instance, space zones are the most effective use of standalone data loggers, but as you go back up the system it can be more effective to use the DDC system. The cost to deploy data loggers for a complex AHU are much more than calibrating the existing sensors on the DDC system if they have the correct points to trend. It is possible to use a combination of DDC system points and data loggers. The only issue when doing this is to make sure the time interval is the same for both the data logger and the DDC data trends. ■

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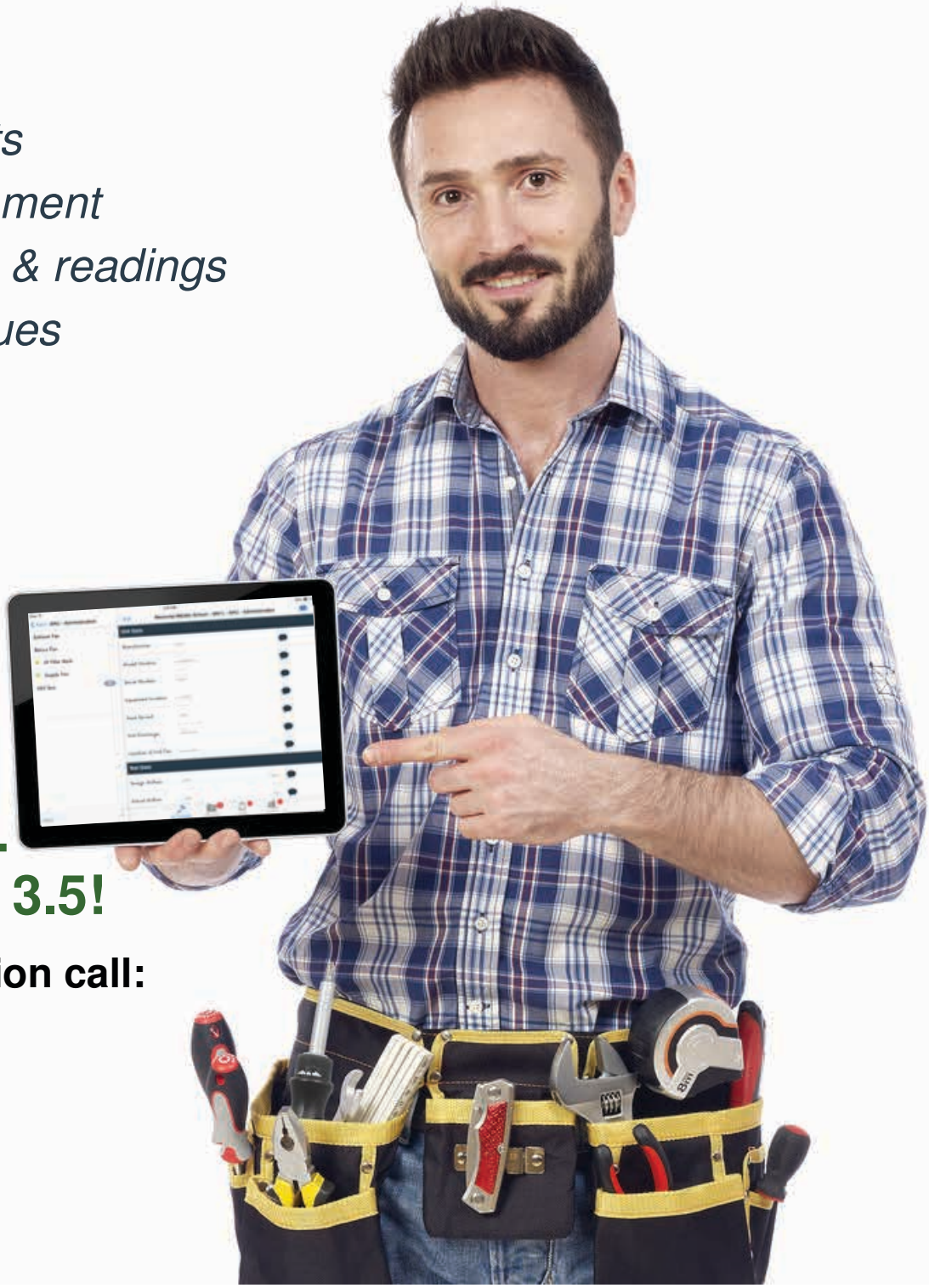

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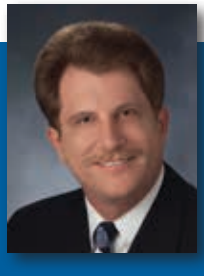

Eric T. Jenison | NEBB Marketing Committee

In 1996, I volunteered to serve on a committee and in 2006, I had the privilege and honor to serve as your NEBB President. In NEBB, the possibilities are unlimited.

This great international organization and industry leader was built with the support of our enthusiastic and hardworking volunteers. Volunteers are the heart and soul of NEBB and without them, we would not have achieved such a high standing in the built environment. We currently have, and in the past have had, some of the most talented people in their fields supporting this organization. Their work is our life blood and it must be maintained. Presently, we have committees for each discipline that are governed by term limits. This provides an orderly process for new committee member participation with new and different ideas and perspectives. We have a process for committee participation that starts with a sub-committee participation for corresponding members for all current NEBB disciplines.

These corresponding members participate mostly via e-mail and will be given assignments as needed. This is an ideal way to have potential committee members ready and available when committee openings come up. This also gives those that are not currently on committees or sub-committees a way to get involved and support the organization. You can make a difference in the industry by being a part of NEBB committees that are involved in setting our procedures and standards for each specific discipline. Your voice can be heard and you matter.

As a NEBB volunteer, one of the most rewarding and exciting projects I was involved in was the rewriting of the NEBB TAB Procedural Standards, 7th Edition in 2005. Being a part of a diverse committee under the leadership of Mr. Al Fudge in the reorganization and re-writing of that document was most gratifying. Having a say in something of that importance is a lifelong industry accomplishment. You can't say that standing on the side lines.

Have your legacy reflect your commitment to the industry that has provided so much opportunity for you by giving back.

I urge you to become involved in NEBB by serving on a local chapter committee or by becoming a national sub-committee member. Please volunteer and be a part of something very special, the possibilities are unlimited. Yes, you can make a difference! ■

Get in touch with NEBB Headquarters with your contact information and primary area of interest. *communications@nebb.org*.

One of our chairs will be in touch with you to see how you can begin your journey into NEBB leadership and grab your spot in the NEBB Network of the industry's finest.

"Your voice can be heard and you matter!"

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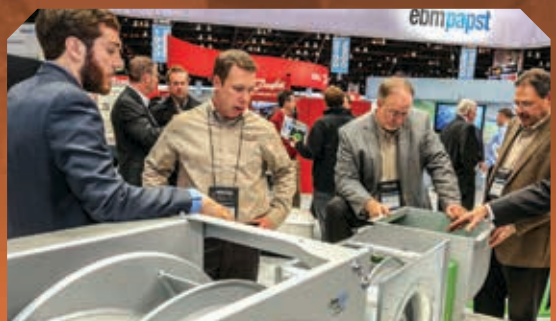

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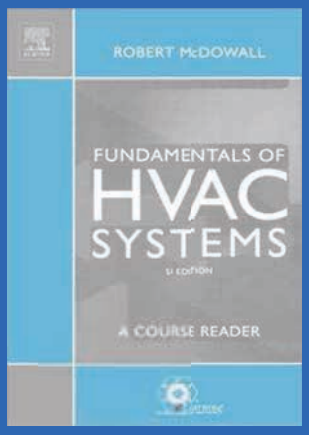

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NEBB - ASHRAE E-Learning Opportunity

NEBB has partnered with ASHRAE to provide our members with HVAC Systems and Control Systems technical training programs offered by ASHRAE. We have organized the following training courses into modules most important to our disciplines.

These training courses and modules can be used to train new employees or provide existing personnel additional expertise. All of the courses are online and can be taken at your own pace. The bundled price deal is limited to a total of 12 months duration for all of the courses in that given module.

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BSC (Cx) Training

Level: Basic	**Cost:** $ 206.00 for all 6 courses	**Time Limit to Complete:** 12 Months
The following DDC control courses are provided to increase the student's knowledge of DDC control systems, their application and basic understanding of how they operate.		
• Introduction to HVAC Control Systems Course		
• Sensors and Auxiliary Devices Course		
• Control Diagrams and Sequences Course		
• DDC Introduction to Hardware and Software Course		
• DDC Networks and Protocols Course		
• DDC Specification, Installation and Commissioning Course		

Retro Commissioning (RCx) Training

Level: Advanced	**Cost:** $ 206.00 for all 6 courses	**Time Limit to Complete:** 12 Months
The following DDC control courses are provided to increase the student's knowledge of DDC control systems beyond the basic course provided under the BSC Cx course shown above.		
• Introduction to HVAC Control Systems Course		
• Electric Controls Course		
• Pneumatic Controls Course		
• Analog Electronic Controls Course		
• Control Diagrams and Sequences Course		
• DDC Networks and Protocols Course		

Commissioning Testing Technician Training

Level: Basic	**Cost:** $ 346.00 for all 12 courses	**Time Limit to Complete:** 12 Months
The following courses are provided to increase the student's knowledge of basic HVAC and DDC control systems.		
HVAC Courses		
• An Introduction to HVAC Systems Course		
• Thermal Comfort Course		
• Ventilation and IAQ Course		
• Hydronic Systems Course		
Controls Courses		
• Energy Conservation Course		
• Special Applications Course		
• Introduction to HVAC Control Systems Course		
• Basics of Electricity Course		
• Control Valves and Dampers Course		
• Sensors and Auxiliary Devices Course		
• Control Diagrams and Sequences Course		
• DDC Specification, Installation and Commissioning Course		

These courses are offered as an additional training resource and are not intended to replace the NEBB Building Systems Commissioning Training seminars and content.

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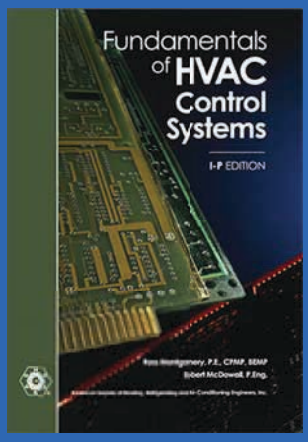

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Tracer Gas: Finding the Right Alternative

Bohdan Fedyk | Chairman, NEBB FHT Committee

Working as part of the group for the "Determination of Suitable Replacement for SF_6 when used as a Tracer Gas in Accordance with ANSI/ASHRAE Standard 110" RTAR-1573 which is looking for a more environmentally friendly replacement tracer gas has proven to be challenging. There are numerous philosophies for a replacement gas but one thing must be of utmost importance, understanding what the Fume Hood Performance Test is meant to accomplish. As a member of the NEBB Fume Hood Performance Testing Committee, a member of the SPC -110P committee for rewriting of ASHRAE-110 Method of Testing, and a Certified Professional with over 25 years of testing Fume Hoods and Laboratory Environments, I have seen many instances of failures of fume hood containment and its effects.

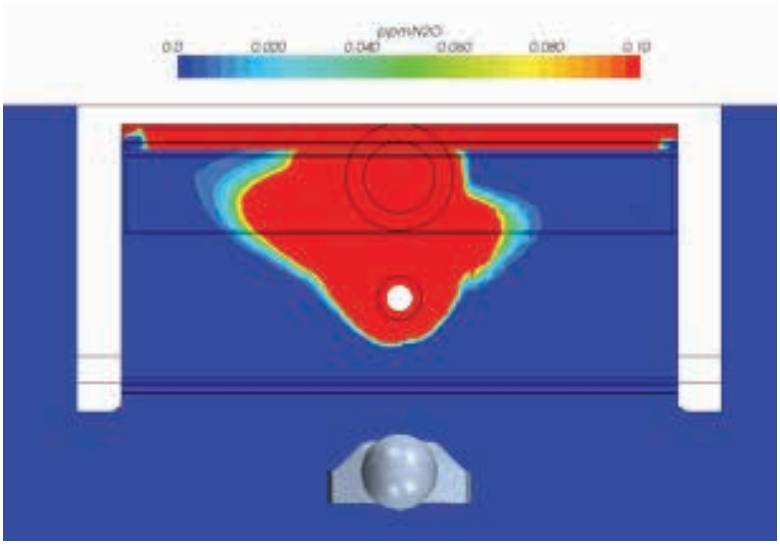
The fume hood, which is an extension of the exhaust system, is much more than just a box in the laboratory, it is critical Personal Protection Equipment (PPE) not only to protect the user but also the laboratory environment. The test criteria was originally established in the 1980s by an ASHRAE Committee that wanted a test that taxed the fume hood to the limit, knowing where the hood would fail and therefore could establish the safe limits for the crucial piece of equipment for the laboratory. While it is not the focus of this article, it should be noted that the performance testing of a fume hood evaluates more than the hood itself, it evaluates the system as a whole: installation, ventilation, etc.

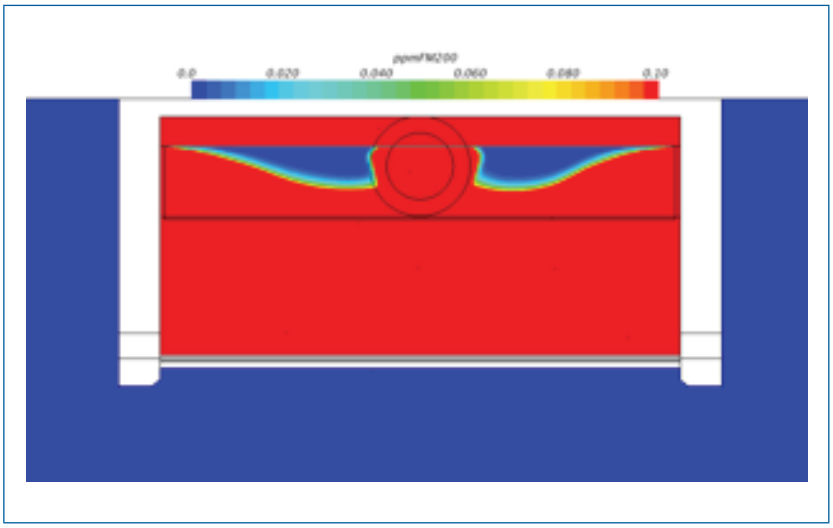
Sulfur hexafluoride (SF_6) was chosen due to its properties prior to the realization of its impact on the environment. While the testing of fume hoods with the greenhouse gas is a major concern, it should be noted that it is not the major contributor of SF_6 to the environment. Just like in these other industries, such as magnesium production or its use as electrical insulator, a suitable replacement must be found.

As we move forward there must be certain criteria for the establishment of new tracer gas:

- Inert gas relatively same weight as SF_6
- Even dispersion through detector
- Reliable detectability

With computer modeling, we have been able to evaluate different gasses as performance indicators of a fume hood and also limitations of others. While there has been a rush in certain areas to quickly replace the present





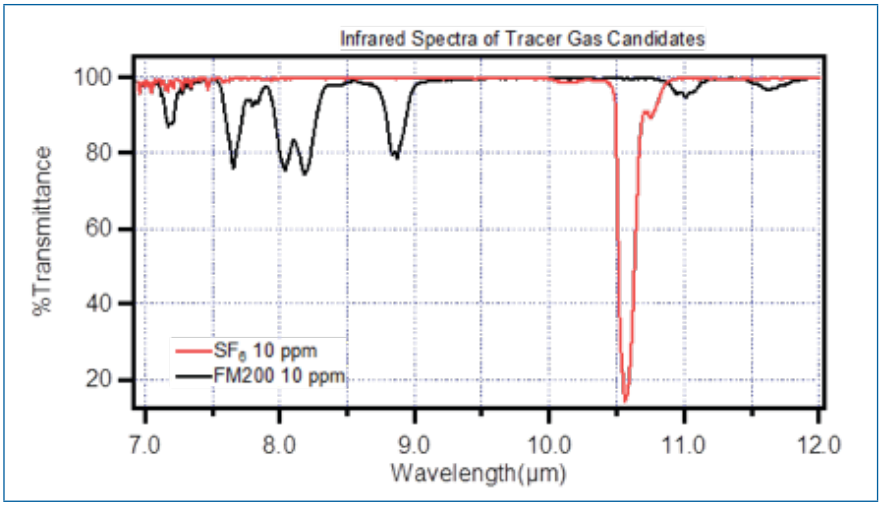
tracer gas for ecological reasons, some of the shortcomings may have been overlooked or disregarded. Nitrous oxide (N_20), being a much lighter gas showed, that the tracer gas concentrations were less likely to be captured within the wall turbulence along the side walls therefore it is not an accurate indicator of actual fume hood operation with gasses being heavier than air. Use of N_2O may result in a false positive since moisture in the air can be detected as N_20. Nitrous oxide, an oxidizer, also reacts with carbon dioxide (CO_2), a by-product of a person performing the Test and usual witnesses required by most specifications, resulting in erroneous test results and depending on concentration levels, it is a fire hazard as well as drug for possible abuse. Nitrous oxide, also known as "laughing gas," is ranked third behind carbon dioxide and methane in contributing to global warming, and is regulated under the Kyoto Protocols. According to the EPA, the gas is 310 times more effective in trapping heat than carbon dioxide. Sixty percent of the nitrous in the atmosphere is produced naturally but why add to it.

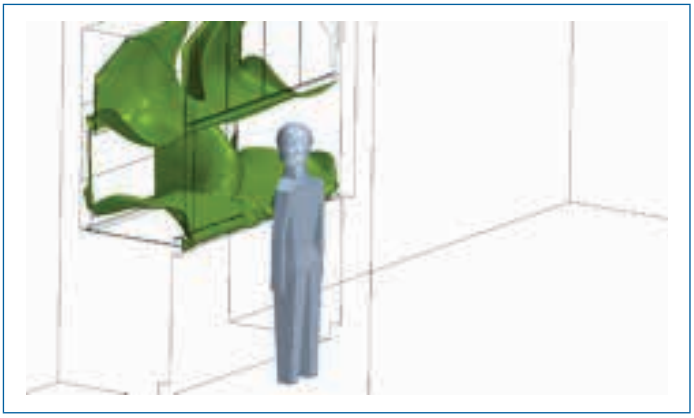
Heptafluoropropane (FM200), on the other hand, actually is heavier than SF_6 and is a good replacement tracer gas for SF_6 providing similar dispersion in the hood with very analogous results to SF_6. FM200 is also a considered a friendly gas.

FM200 has also been used by the United States military as a replacement for halon. The United States Army initiated a research project looking for an efficient, non-toxic fire extinguishant after suffering extensive losses due to fire in World War II. This project directly led to the use of halons as fire protection agents. The most widely employed chemical halon agent used for total flooding applications by the United States Navy was Halon 1301 (CF3Br). But the same bromine atom in Halon 1301 that effectively extinguished fire also reacted with ozone.

Research by the NTCSS concluded that the trifluoromethyl moiety (CF3) was an effective chemical suppressant. Based on this, Great Lakes Chemical Corporation developed their three carbon agent, choosing the molecular structure 1,1,1,2,3,3,3-heptafluoropropane (HFP, HFC-227ea, C3HF7) for total flooding applications. As an extinguishant HFP works primarily as a physical agent, removing energy and displacing oxygen. As a result the Army replaced Halon 1301 systems with HFP and the NRL patented WSCS in over sixty of their watercraft engine compartments, up to 1700 m3 in volume.

Below is a comparison of the spectra of FM200 (HFP) and SF_6. For a pretty good summary of properties:





http://en.wikipedia.org/wiki/1,1,1,2,3,3,3Heptafluoropropane

Estimation is that the detection limit for FM200 will be at least a factor of 2 times higher than that for SF_6. It seems like a pretty reasonable candidate as a tracer for hood evaluation. Physical testing of fume hoods verified that reduction of the tracer gas did not affect the detection by an infrared analyzer which was collaborated by the computer modeling at various tracer gas flow-rates. This would allow for a reduction of the gas without easing the effectiveness of the test procedure while lessening gas being released into the environment.

While there has not been a consensus within the testing community, there is a need to find a suitable replacement that provides assurance of acceptable testing protocol for the fume hood while also offering an environmental friendly alternative to sulfur hexafluoride. Due to the carbon taxation and ecological attitudes, there are many areas of the world that have foregone or otherwise inadequately tested a crucial piece of personnel protection equipment, e.g. the fume hood, leaving many individuals and the environment at risk. Continued research and hopefully agreement can provide an effective alternative to SF_6 that will still function as ecologically sustainable testing tracer gas providing the required performance fume hood protocol but until then, we must still provide a safe working laboratory environment, even at the cost of using sulfur hexafluoride. ■

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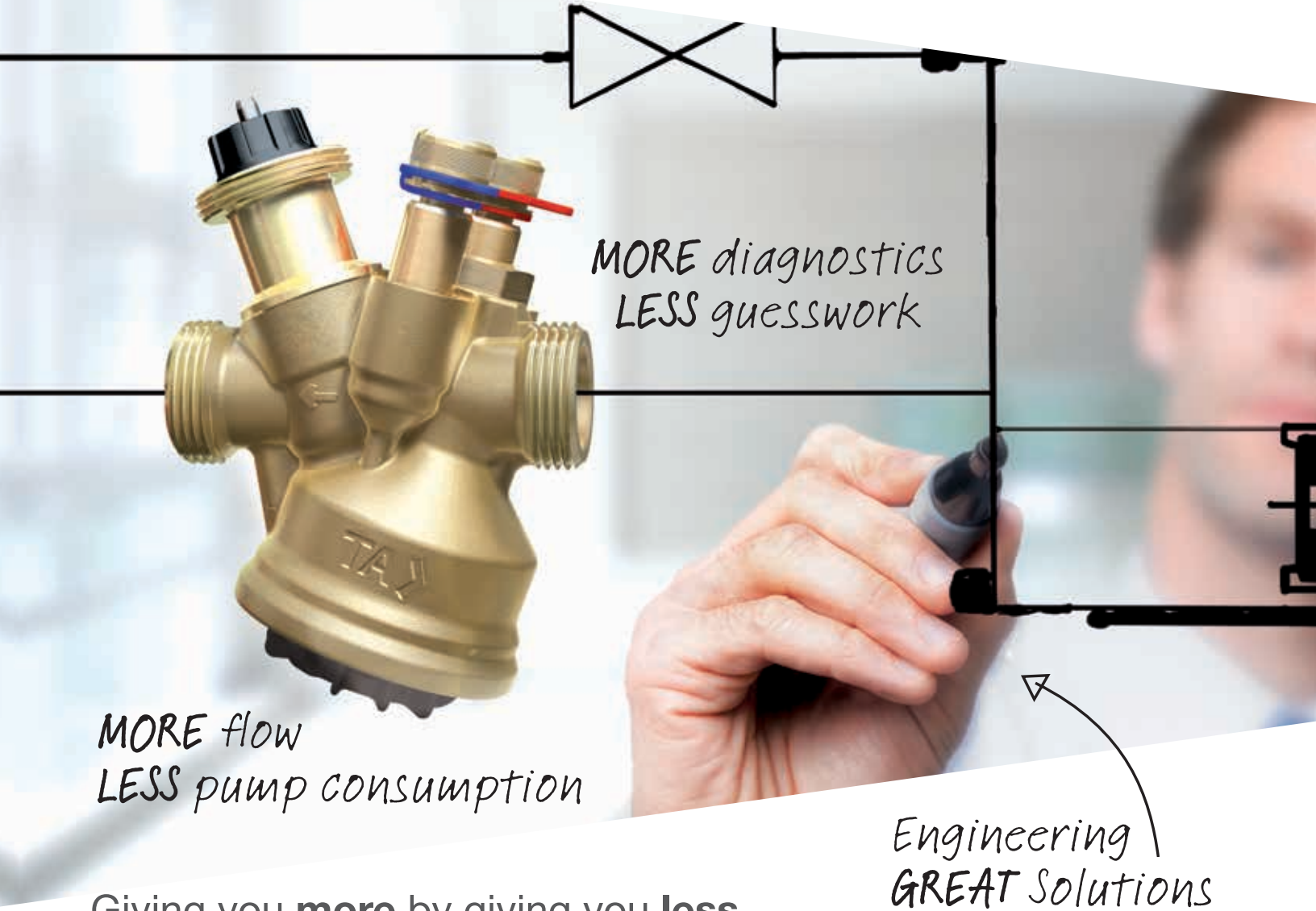

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2016 NEBB Annual Conference

Albuquerque

New Mexico

Rich History • Bright Future

April 14-16

Hyatt Regency Downtown

NEBB: Rich History, Bright Future

2016 NEBB Annual Conference
Albuquerque, NM | April 14-16

For 45 years, NEBB has been delivering continuing educational programming to empower our certificants to deliver more. In 2016 the tradition continues as we will be celebrating our "Rich History and Bright Future" in historic and culturally vibrant Albuquerque, New Mexico. Attendees will have the opportunity to explore the authentic southwestern culture outside of meeting hours with planned tours and social events while also adding to the building blocks of their bright future through diverse and varied education sessions. Registrants can customize their educational experience with choices covering our seven technical disciplines as well as general business and marketing best practices.

The 2016 NEBB Annual Conference will be held in downtown Albuquerque at the Hyatt Regency Hotel. The facility will prove the perfect launching point for conference attendees with its spacious and modern meeting amenities and central location. Adventure and entertainment is close by with easy access to Albuquerque's historic downtown with galleries, shopping, and numerous restaurants.

The conference will deliver relevant, state-of-the-art elective sessions that will address a variety of TAB, Cleanroom, Fume Hood Performance Testing, Building Envelope Testing, Sound and Vibration Testing, Commissioning/Recommissioning, general industry updates, as well as other unique aspects of doing business in the high performance building and systems industry. Plus, there will be networking activities that will bring the best of Albuquerque to our attendees with the NEBB 19th Annual Golf Tournament, at a course at the foot of the beautiful Sandia mountain range, the traditional "Get Acquainted Reception" to kick us off on our opening night, and two optional off-site tours with one planned pre-convention making it easy to squeeze in quality time before the convention kicks-off.

Registration is OPEN! Log on to
https://nebb.cvent.com/2016AnnualMeeting
today and take advantage of the Early-Bird discount.

2016 NEBB Annual Conference Schedule*

Tuesday, April 12th

8:00 a.m.	–	5:00 p.m.	NEBB Optional Tour: Santa Fe for the Day, via the Turquoise Trail**
8:00 a.m.	–	4:00 p.m.	Closed Committee Meetings

Wednesday, April 13th

7:00 a.m.	–	5:00 p.m.	Conference Registration Open
7:00 a.m.	–	2:00 p.m.	NEBB 19th Annual Golf Tournament**
8:00 a.m.	–	5:00 p.m.	Closed Committee Meetings

Thursday, April 14th

7:00 a.m.	–	5:00 p.m.	Conference Registration Open
9:00 a.m.	–	10:00 a.m.	Guest Breakfast Presentation “Discover Albuquerque”
11:00 a.m.	–	4:00 p.m.	Guests Invited: Explore Albuquerque (complimentary transport available)
8:00 a.m.	–	5:00 p.m.	Closed/Open Committee Meetings
5:00 p.m.	–	6:30 p.m.	Opening Session
7:45 p.m.	–	10:00 p.m.	Get Acquainted Reception

Friday, April 15th

6:30 a.m.	–	8:00 a.m.	Continental Breakfast for Conference Attendees
7:00 a.m.	–	5:00 p.m.	Conference Registration Open
7:00 a.m.	–	5:00 p.m.	Vendor Exhibits Available - Educate Yourself with NEBB Sponsors
8:00 a.m.	–	4:00 p.m.	Optional Guest Tour: Acoma “Sky City” Pueblo and Artisan Winery
8:00 a.m.	–	3:45 p.m.	Technical Sessions
8:00 a.m.	–	5:00 p.m.	Chapter Coordinators Meeting
11:15 a.m.	–	12:30 p.m.	Lunch for all Conference Attendees
3:45 p.m.	–	5:30 p.m.	Vendor Hosted Reception - All Conference Attendees Welcome

Saturday April 16th

6:30 a.m.	–	8:00 a.m.	Continental Breakfast for Conference Attendees
7:00 a.m.	–	5:00 p.m.	Conference Registration Open
7:00 a.m.	–	5:00 p.m.	Vendor Exhibits Available - Educate Yourself with NEBB Sponsors
8:00 a.m.	–	9:30 a.m.	NEBB Business Meeting & Town Hall
9:45 a.m.	–	3:45 p.m.	Technical Sessions
11:15 a.m.	–	12:30 p.m.	Lunch for all Conference Attendees
4:00 p.m.	–	5:30 p.m.	Closing Session with Presentations, Awards & Adjournment

Sunday April 17th

8:00 a.m.	–	5:00 p.m.	Board Meeting

*Draft schedule subject to change

**Separate registration required

This draft schedule will be firmed up with technical session and auxiliary details added soon. Check online at https://nebb.cvent.com/2016AnnualMeeting or contact cheryl@nebb.org for additional information. We look forward to seeing you there!

NEBB Discipline Update

NEBB Disciplines are supported by volunteer experts in areas of specialized high building performance areas. Each group is committed to continued growth and keeping NEBB Certification programs the GOLD Technical Standard in each specialty.

Building Enclosure Testing (BET) Committee

***Phil Emory*, Chairman**
Neudorfer Engineers, Inc.

One of NEBB's newest committees is the Building Enclosure Testing (BET) Committee. They completed four seminars so far in Missouri, Washington DC, California, and Hawaii. The numbers have been increasing at their seminars, so they are likely going to hold them more often to keep the attendance manageable.

Phil Emory, the BET Committee Chair, attended the ASTM Workshop in Tampa, FL. He compared the NEBB BET Procedural Standards with other industry standards and reports that NEBB is well-positioned to be a leader in this discipline. Phil is to be applauded for his active involvement in the latest industry developments as well as his representation of NEBB.

Phil does quite a bit of "lunch and learns" locally but is available to travel much more to discuss the theory and application of building enclosure testing and code compliance with Developers, Architects and Contractors, .

As the BET Committee continues to review the BET Procedural Standards, they could use some help. The Committee is actively seeking volunteers, and this would be a great way to get involved on a National level. If you are interested, contact the NEBB office or your chapter coordinator. Although this committee is relatively new, it is a very progressive one as new building regulations continue to roll out. It's a great opportunity to get involved!

Building Systems Commissioning (BSC) Committee

***Jim Bochat*, Chairman**
Commissioning Concepts

This last year the BSC Committee has produced the new BSC Commissioning Testing Technician Handbook and our new Energy Calculation Handbook and the associated Excel calculation program. The BSC Committee has been serving both on the BSC Committee and as members of the BSC RCx Standards Development Committee for our new ANSI standard. This standard development committee also has members from outside our organization who represent the Military, Hospitals, General Contractors and Control Manufacture ESCOs.

The first ANSI Standard the group is working on is the NEBB Technical Retro-Commissioning of Existing Buildings which is anticipated being completed in early 2016. Having an ANSI standard for the performance of Technical RCx projects will help establish NEBB as the leading technical provider of this service. The standard is written in code language and describes what processes you have to perform to actually improve the performance of a building and not just end up with a list of things to improve.

At the same time the committee has also developed and produced a training seminar for the new BSC Commissioning Testing Technician seminar.

The second ANSI standard will be for the NEBB Whole Building Technical Commissioning of New Construction standard. This standard will cover all technical systems in a high performance building and will outline the actual technical processes that are required to insure building performance. The Committee anticipates this standard being complete in early 2017.

The Committee is planning on holding both RCx and BSC training seminars the first half of 2016. Contact the NEBB

offices to be sure you are on the mailing list to receive additional details.

Cleanroom Performance Testing (CPT) Committee

***Patrick C. Law*, Chairman**
Hepatest, Inc.

The Cleanroom Performance Testing (CPT) Committee has had a busy year thus far. They have administered training seminars for Professionals and Technicians, administered exams for Technicians, and a BETA exam for Professionals. The Committee was also able to finalize the CPT Home Study Course and submit it to the publisher.

In the next few months, the CPT Committee will be evaluating all exams for correctness and roll out the Home Study Course.

Next year, the CPT Committee would like to put on a seminar in Asia. If you are interested in attending such a seminar, let the NEBB office or your chapter coordinator know. The likelihood of the seminar being offered increases as the demand increases.

Fume Hood Testing (FHT) Committee

***Don Fedyk*, Chairman**
Air Filtration Management

During the year 2015 the FHT Committee offered a hands-on training presentation along with the practical examinations at the annual NEBB Conference in Hawaii. In the fall the committee offered a second seminar in Kansas City, again with hands-on training, as well as offering the written and practical examinations.

Looking into the future to 2016, the Committee will be enhancing training instructions by offering more troubleshooting and alarm calibration during the upcoming presentations. The seminars will offer the hands-on training and the examination testing are scheduled for March and October.

The Committee will be introducing a Laboratory Commissioning Procedural Standard. Additionally, they will be launching an updated FHT Procedural Standard, second edition. The FHT team will be utilizing computer modeling procedures to simulate FHT testing protocol with different gasses. As an example, heptafluoropropane testing is being offered as alternative to greenhouse gas sulfur hexafluoride as well as nitrous oxide, which while being used in California, is an oxidizer instead of inert and is an illegal drug throughout most of the civilized world.

Sound & Vibration (S&V) Committee

***Kevin Gaghan*, Chairman**
Gaghan Mechanical, Inc.

The S&V Committee has completed or is currently working on the following initiatives: the Committee is working on standardizing regional test rigs for S&V at existing testing facilities. After much consideration and study, two testing facilities were deemed acceptable for S&V classroom and practical testing. The S&V Committee is continuing work on writing the standardized test procedures. The S&V Committee has been working on finalizing the needed updates to the Home Study Course in S&V for candidate certified technicians. The updates are in the review phase. The latest proposed S&V Procedural Standards have been approved and are available for purchase. The Committee continues to support the Certification Board by supplying S&V information for consideration in development of questions that are needed for the testing activities. The Committee sent S&V educational materials to the Cleanroom Committee for inclusion in the Cleanroom Performance Testing body of knowledge: learning materials/seminar development.

Testing, Adjusting & Balancing (TAB) Committee

***Steve Clark*, Chairman**
Clark Balancing Ltd.

The TAB Committee is focused on completing the training modules for the TAB Certified Professional and is also in development for the TAB Certified Technician training program. The TAB Committee is performing routine follow ups on the new 8th edition of the TAB Procedural Standards concerning the instrument list requirements and industry technology changes.

The committee recently held a seminar in San Diego and has dates on the calendar for 2 seminars in 2016.

NEBB NEWS

The NEBB Board of Directors – Overview and Governance

Moving NEBB Forward 2015-2016

The NEBB Board of Directors held their autumn meeting from October 16-17, 2015 in Jackson Hole, Wyoming. Among the many business items covered at the meeting, the group adopted revised Bylaws and Operational Procedures, elected NEBB Officers and Directors for the 2015-2016 term and appointed committee chairs for this next year. Important highlights from the meeting are summarized below:

Leblanc Ascends to NEBB Presidency

Mr. Jean-Paul Leblanc rose from the office of President-Elect to President at the autumn meeting of the NEBB Board of Directors.

Mr. Leblanc is the owner and president of Hydrauliques R&O Services Inc. The company, located in Montreal, Canada, was formed in 1983 and focuses on testing, adjusting and balancing (TAB) work.

Mr. Leblanc became a NEBB Certified Professional in air and hydronics in 1988, and has since been promoting NEBB in his marketplace and to his peers. He became active in the NEBB Canada Chapter in 1988, serving twice as the chapter president and currently as a member of its Board of Directors.

Mr. Leblanc is a long-time NEBB volunteer who has contributed in a variety of positions. He served on the NEBB TAB Committee for many years, including a term as chairman. Now in his eleventh year on the NEBB Board of Directors, Mr. Leblanc moved through the chairs of the NEBB Executive/Finance Committee, serving one term in each NEBB officer position.

"President Leblanc's long tenure on the NEBB Board of Directors and Executive/Finance Committee is a huge benefit to NEBB as we continue to improve our certification and training programs. Having a leader with involvement in these initiatives from planning through implementation phases is exactly what our organization needs. Jean-Paul understands the importance of balancing the historical benefits of our programs with the current needs of our industry and certificants. I could not be more excited to see Jean-Paul as our 2015-2016 NEBB President," said Jim Huber, NEBB Immediate Past President.

Jim Huber (right) pins the 2016 NEBB Presidential pin on incoming President, Jean-Paul LeBlanc (left)

2015-2016 NEBB Officers and Directors

Officers serving on the Executive/Finance Committee (E/FC) for 2015-2016 include:

- **President:** Jean-Paul LeBlanc, Hydrauliques R&O Services, Inc., Montreal, Quebec, Canada
- **President-Elect:** Jim Kelleher, Metro Test & Balance, Capitol Heights, Maryland
- **Vice President:** Donald Hill, AccuTec Services, Inc., Lee's Summit, Missouri
- **Treasurer:** Jim Whorton, ViroCon, Inc., Kansas City, Missouri
- **Immediate Past President:** Jim Huber, Complete Commissioning, Annapolis, Maryland

The E/FC presented a group of highly qualified candidates for the election of Directors. Three Certified Professionals serving on the Board were re-elected for additional two-year terms. They include:

- Steve Clark, Clark Balancing Ltd, Milton, Ontario, Canada;
- Bohdan Fedyk, Air Filtration Management, Buffalo, New York; and,
- Amber Ryman, ACCO Engineered Systems, San Leandro, California.

Two new Directors were also elected to two-year terms. They include:

- Donald Pittser, JEDI Balancing, Inc., Erie, Colorado; and,
- Glenn See, TAB Technologies, Austin, Texas.

Don Pittser (left) and Glenn See (right) are new members of the NEBB Board of Directors

Other members of the NEBB Board include:

- Jeffrey Schools, Fisher Balancing Company, Williamstown, New Jersey
- Jon Sheppard, Atlantic Test & Balancing, Inc., Chesapeake, Virginia
- Chris Wright, TCM Pty Ltd., Monnah, Tasmania, Australia

Two members of the Board of Directors completed their terms of service at the meeting in Wyoming and were honored for their contributions to the organization and industry. They include:

- Robert Linder, Karges-Faulconbridge, Inc., St. Paul, Minnesota
- Nicholas White, N.D. White Engineering Svc. Co., Abilene, Texas

NEBB Committee Chairs for 2015-2016

Each year in October, the NEBB Board of Directors appoints committee chairs for the next year. Committee chairs for the 2015-2016 term include:

- **Building Enclosure Testing (BET) Committee:** Phil Emory, Neudorfer Engineers, Inc., Seattle, Washington
- **Building Systems Commissioning (BSC) Committee:** Jim Bochat, Commissioning Concepts, Phoenix, Arizona
- **Certification Board:** Chair - Stan Fleischer*, Seneca Balance of Maryland, Inc., Edgewood, Maryland; and, Vice Chair - Rick Farrington*, Coffman Engineers, Inc., Seattle, Washington
- **Chapter Affairs Committee:** Glenn See, TAB Technologies, Austin, Texas
- **Cleanroom Performance Testing (CPT) Committee:** Patrick C. Law*, Hepatest, Inc., Altamonte Springs, Florida
- **Committee Chairs Committee:** Jim Kelleher*, Metro Test & Balance, Capitol Heights, Maryland
- **Fume Hood Testing (FHT) Committee:** Bohdan Fedyk, Air Filtration Management, Buffalo, New York
- **Marketing Committee:** Eric Jennison, Total Dynamic Balance, Inc., Deerfield Beach, Florida

- **Standards Council:** Terry Townsend, Townsend Engineering, Inc., Chattanooga, Tennessee
- **Sound & Vibration (S&V) Committee:** Kevin Gaghan, Gaghan Mechanical, Inc., Alexandria, Virginia
- **Testing, Adjusting & Balancing (TAB) Committee:** Steve Clark*, Clark Balancing Ltd., Milton, Ontario, Canada
- **Title 24 Committee:** Jim Huber, Complete Commissioning, Annapolis, Maryland

To see a complete listing of the committee volunteers, please visit the NEBB website: http://www.nebb.org/about/nebb_committee_listing/

* Indicates new to the position. All others reappointed.

NEBB Adopts Revised Bylaws and OPs

Revisions to the NEBB Bylaws and NEBB Operational Procedures were proposed by the Chapter Affairs Committee at the October NEBB Board of Directors meeting. The Board approved the revisions, and the revised governing documents take effect immediately. Here is an overview of some of the most significant revisions.

NEBB Bylaws

Provisions defining the removal from volunteer positions were added in Articles V, VII, VIII, and IX.

Reporting requirements for the NEBB Certification Board and Standards Council were increased in Articles VII and VIII.

The scope of activities for the NEBB Marketing Committee were better defined in Article IX.

Areas where NEBB Chapters can and cannot assess fees to their members were defined in Article X.

Small editorial changes were made throughout the Bylaws to provide consistency.

NEBB Operational Procedures

Section 1.0: Chapters – Changes were made to memorialize that NEBB fees for firm certification and personnel certification are collected by NEBB rather than by chapters. Provisions were added to ensure attendance at the NEBB Annual Conference by designated chapter representatives. Requirements for NEBB Chapter Presidents and Chapter Technical Committee Chairs to be NEBB Certified Professionals employed by NEBB Certified Firms were adopted.

Section 2.0: Certified Firms – The length of time a firm can be in "Applicant" status before achieving Firm Certification was reduced from three years to one year. Language memorializing the requirement that a Designated Certified Professional must be a full-time employee working from the location of the Certified Firm was more clearly defined. Requirements for Firm Recertification were modified to clarify that fees are payable annually and recertification applications are required biennially. Language was expanded to state that a Certified Professional may only serve as the Designated CP for one firm in one location.

Section 3.0: Administrative – A new subsection, "Certificate and Stamp Name Variants and DBAs," was added to allow for companies doing business in a name other than its legal, incorporated name to received NEBB stamps and certificates under a company name variant or "DBA."

Section 4.0: Compliance and Enforcement – The subsections on suspension and decertification of firm certification were modified to define when appeals for extensions must be submitted. The deadlines for recertification, suspension and decertification were clarified. The procedures for reinstatement from suspension to Certified Firm status were defined. The NEBB Board also increased the reinstatement fee for firms in suspension from $250 to $1,000.

The revised NEBB Bylaws and NEBB Operational Procedures have been posted to the NEBB website in the Governing Documents section: http://www.nebb.org/resources/nebb_governing_documents/. Redline-strike out versions showing all areas revised are available upon written request to Tiffany Suite, NEBB Operations Manager, at tiffany@nebb.org

NEBB is led by business professionals just like you. Make a difference in NEBB while also making a difference for your career. Volunteering for NEBB is an excellent way to advance your career by stepping into a leadership role for your industry. NEBB volunteers enjoy opportunities to share expertise, learn from peers and give back to the organization. Volunteering is a rewarding activity, enhances your resume, and is a great way to expand your network of industry contacts. Serving as a volunteer requires dedication and commitment. There is hard work and you will be challenged.

If you are interested in getting more involved, email communications@nebb.org. One small step forward brings with it rich rewards!

NEBB NEWS

NEBB Chapters

NEBB chapters are a key component to NEBB and its success. Historically, chapters have played a unique and vital role for NEBB. While NEBB has changed many of its processes and procedures over the last year, one thing that hasn't changed is the importance to NEBB to have a strong, vibrant network of chapters.

Mid-South EBB (MEBB) Recertification Seminar

September 21 – 22, 2015

King and Prince Beach & Golf Resort, St. Simons Island, GA

MEBB hosted its 2015 Recertification Seminar September 21-22, 2015 at the beautiful King and Prince Beach & Golf Resort in St. Simons Island, GA. The seminar was well attended with over 90 Certified Professionals present. 2014-2015 NEBB President, Jim Huber, was a speaker at the seminar, and his presentation was very informative on the changes at NEBB. Nick White, 2014-2015 NEBB TAB Chairman, gave a presentation on the new TAB Procedural Manual, which provided the attendees an opportunity to ask specific questions regarding the new manual. Other speakers included Michael Davis of Chamberlain Hrdlicka Attorneys at Law and Pete Secor of Evergreen Telemetry. Evergreen Telemetry donated a CH-15D capture hood, WR-301 Wrist Reporter, and S-PVF-1 Wireless Sensing Module as a giveaway to one of the attendees. The lucky winner of the giveaway was Shelley Moore of Baldwin Air Design.

The MEBB 2016 Recertification Seminar will be held in Gulf Shores, Alabama – *Ginger Slaick, MEBB Chapter Coordinator.*

Mid-Atlantic EBA (MAEBA) Recertification Seminar

September 20 – 21, 2015

Resorts Casino and Hotel, Atlantic City, NJ

The seminar kicked off with a dinner reception Jimmy Buffet style at his LandShark Restaurant behind Resorts Casino over the Atlantic City beach!

MAEBA would like to thank Jim Kelleher, NEBB Board of Director for joining us this year to give a National Update. The educational portion of the seminar began Monday morning with a presentation given by John Connolly, Safety Professional on "Ladder Safety."

Then Brian Chlan, IMI Tour Andersson gave his presentation on "Proportional Balancing Practices to Differential Pressure Stabilization and how it relates to system balance."

After lunch and the vendor display, the afternoon speaker was Andy Stadheim of Building Start. He presented "A Look at How Digital Documentation is Helping Address the Daily Challenges Facing a TAB/Cx Company." In the presentation, examples were given on how users are saving time in the field and office.

The presentation also included discussions on issues/deficiency management, offline data capture, speed of final reports, and access to project data from any device – *Trish Casey, MAEBA Chapter Coordinator.*

Capital - MarVa International NEBB (CAPMarva) Recertification Seminar

September 25, 2015

Hilton Baltimore BWI Airport Hotel, Linthicum, MD

The Chapter Recertification Seminar was held on Friday September 25th at the Hilton Baltimore BWI Airport Hotel in Linthicum, MD. The full day seminar was attended by more than one hundred NEBB Certified Professionals and NEBB Certified Technicians. Three guest speakers were invited to the event and their presentations were well-received with positive feedback from the attendees.

Brent Baird from Instruments Direct presented on ultrasonic flow meters and ultrasonic flow measurement. Brent explained the history of ultrasonic flow measuring and the technology behind how the meters actually work. He went over the many different types and technologies of ultrasonic meters and described the specific uses for each one and how they function. The presentation was nicely done with a lot of useful information and slides.

Ryan Westlund from REHAU addressed the multiple advantages of using radiant systems versus conventional heating. He described several installation techniques and different materials used to accomplish a vast variety of applications. Ryan demonstrated the energy savings and different building statistics from those who are using radiant systems and the benefits from them.

Don Hill from AccuTec, Inc. (and also on the NEBB EFC/Board of Directors) launched a discussion on psychrometrics. Don simplified the logic behind load calculations and explained the importance of understanding unit selections based on heat rejection. Don captured the audience and kept it interesting on what many would consider a dry subject.

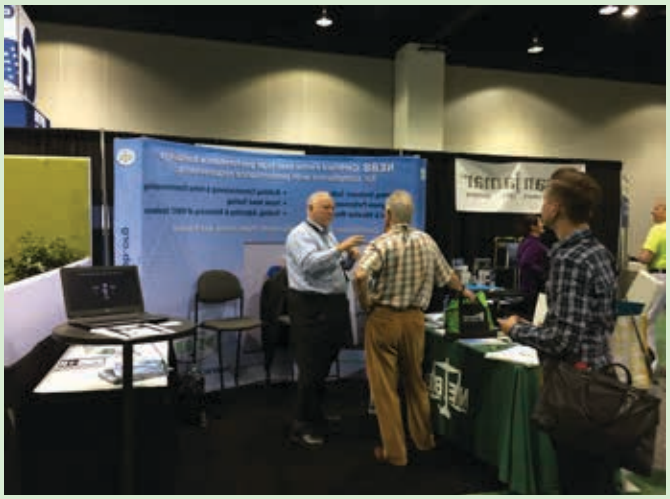
Lastly, Jim Kelleher from the NEBB Board of Directors spoke on the updates and procedures for Firm/CP/Technician requirements for recertification.

The Seminar was nicely done, a productive event, and thanks to all committee members and NEBB personnel for their time, hard work, and support. As NEBB Certified Professionals it's imperative to remember the importance behind these yearly recertification seminars. NEBB CPs continue to stay on top of the industry by demonstrating the skills, knowledge, and expertise learned at these events. – *Darren Aley, CapMarva Marketing Chairperson*

Chapter events and other news are an important part of the NEBB experience. Let us put your chapter in the spotlight! Chapter staff/volunteers are encouraged to email updates/information to communications@nebb.org for inclusion in future NEBB Professionals.

IFMA's 2015 World Workplace Conference

The IFMA's 2015 World Workplace Conference was held in Denver, Colorado, October 7-9, 2015. The NEBB Booth was visited by masses of interested trade show attendees from many areas of facility management interested in learning more about the technical expertise offered by NEBB Certified Technicians, professionals and their associated firms.



Long-time volunteers and former NEBB Presidents Jim Bochat and Stephen Wiggins worked with the NEBB Director of Communication and Events at the booth. NEBB has had long standing positive relationship with International Facility Management Association (IFMA). IFMA's current Executive Director, Tony Keane spoke at the 2015 NEBB Annual Conference in Hawaii.

Welcome!

Cynthia Hereth Joins NEBB Staff

NEBB is pleased to announce that Cynthia "Cindi" Hereth has joined the staff at our headquarters office. She is NEBB's new Director of Certification.

Hereth's career in organizational management spans nearly 30 years. She is an expert in certification program development and implementation, non-profit educational training, and other areas including e-learning programs, committee management and event planning.

From 1987 through 2006, as a vice president of Association Services Corporation, a multiple association management company, Hereth was responsible for planning and executing educational programs for six non-profit organizations. For eight of the last ten years, Hereth served as Director of Training & Certification for the Restoration Industry Association (RIA), for whom she managed several certification programs, developed professional course curriculum, and served as staff liaison for six technical committees.

"We are thrilled to have Cindi join our team," said Glenn Fellman, NEBB Executive Vice President. "NEBB will benefit greatly by having a Director of Certification with vast experience creating and administering ANSI-compliant personnel certification programs."

Hereth works out of NEBB's international headquarters office in Gaithersburg, Maryland. She can be reached at 301.591.0491 or by email to cindi@nebb.org.

Calendar of Upcoming Events

*For more information visit **www.nebb.org***

January

- **JANUARY 29-30, 2016**
  Florida EBB Chapter: Testing and Balance Practical Exam

February

- **FEBRUARY 26, 2016**
  Northern California/Hawaii NEBB Annual Recertification & Business Meeting

March

- **MARCH 07-10, 2016**
  NEBB Sound and Vibration Certified Professional Seminar & Optional Exam
- **MARCH 14-18, 2016**
  NEBB Fume Hood Testing Seminar and Optional Exam for Certified Professionals
- **MARCH 21-24, 2016**
  NEBB Building Systems Commissioning Certified Professional Training/ Seminar and Optional Exam

April

- **APRIL 11-13, 2016**
  NEBB Building Enclosure Testing Certified Professional Seminar and Optional Exam
- **APRIL 14-16, 2016 2016**
  NEBB Annual Conference
- **APRIL 25-28, 2016**
  NEBB Retro-Commissioning Certified Professional Training/Seminar and Optional Exam

May

- **MAY 09-13, 2016**
  NEBB Cleanroom Performance Testing Certified Technician Seminar and Optional Exam
- **MAY 13-14, 2016**
  Florida EBB Chapter: Testing and Balance Practical Exam

June

- **JUNE 06-09, 2016**
  NEBB TAB Certified Professional Review Seminar & Optional Exam

August

- **AUGUST 19-20, 2016**
  Florida EBB Chapter: Testing and Balance Practical Exam

September

- **SEPTEMBER 19-23, 2016**
  NEBB Fume Hood Testing Seminar and Optional Exam for Certified Professionals
- **SEPTEMBER 25-29, 2016**
  NEBB Building Enclosure Testing Certified Professional Seminar and Optional Exam
- **SEPTEMBER 26-30, 2016**
  NEBB TAB Certified Professional Review Seminar and Optional Exam

October

- **OCTOBER 03-06, 2016**
  NEBB Sound and Vibration Certified Professional Seminar and Optional Exam
- **OCTOBER 03-06, 2016**
  NEBB Cleanroom Performance Testing (CPT) Certified Professional Seminar and Optional Exam

NEBB Annual Conference NEBB Seminars Chapter Meetings

SPREAD NEBB EXPERTISE

Share NEBB with the High Performance Building Industry and Increase your Visibility!

Current Call for Abstracts/Presentation Opportunities

ESTECH 2016 – Hosted by IEST
May 2-5, 2016
Abstracts/Presentations Submission Period Ending 1/1/2016
Details and Application available at
https://iestonline.wordpress.com/2015/10/02/116/

CONSTRUCT 2016
September 7-9, 2016
Abstracts/Presentations Submission Period Ending 12/20/2015
Details and Application available at
www.surveymonkey.com/s/Construct2016

IFMA's World Workplace
San Diego, CA, on Oct. 5-7, 2016
Abstracts/Presentations Submission Period January through Mid-March 2016
Details available mid December at
http://worldworkplace.ifma.org/

Are you affiliated with an organization where a NEBB Certificant could present? Please share any opportunities along with deadlines for your affiliated organizations: Email communications@nebb.org. The world needs to know about the NEBB difference – Expertise and Technical. Help us spread the word and help yourself boost your visibility and your career!

It's Time to Recertify!

Recertification packets were distributed at the beginning of November to all NEBB Certified Firms, Certified Professionals and Certified Technicians.

All NEBB firms are required to pay annual firm fees by January 1, 2016. Fees are remitted directly to NEBB International Headquarters in Gaithersburg Maryland. Those firms on their biennial recertification cycle must also submit recertification applications to their local chapters.

Certified Professionals and Certified Technicians have to remit their annual fees to NEBB by January 1, 2016 as well. Those on their biennial recertification cycle also have to submit recertification applications to NEBB. Recertification applications were distributed with personnel certification fee invoices.

If you haven't received your invoice and/or recertification application, please contact:

For Firm Certification – Tiffany Suite, NEBB Operations Manager, tiffany@nebb.org

For Personnel Certification – Sheila Simms, NEBB Certification Manager, sheila@nebb.org

Failure to remit fees or submit applications by deadlines established in NEBB's Operational Procedures may result in suspension or decertification. ***Don't delay – submit today!***

BECOME A SPONSOR!

2016 NEBB Annual Conference

Albuquerque

New Mexico

Rich History • Bright Future

April 14-16

Hyatt Regency Downtown

Sponsorship Invitation for the 2016 NEBB Annual Conference

A wide range of sponsorship opportunities are available to **build your relationships within the valuable NEBB community** of expert commissioning professionals. Read more at the detailed 2016 NEBB Sponsorship Brochure at www.nebb.org.

The NEBB Annual Conference attracts NEBB members, company leaders and executives. The opening session includes keynote address by industry leaders, followed by technical sessions and a vendor exhibit which provides a landscape of emerging technologies and products.

As a sponsor, you will receive:

- Acknowledgment in attendee materials as official conference sponsor
- Sponsor's logo at the event website and a URL hot-link from the conference website directly to your homepage
- Onsite event signage highlighting your sponsorship

Reserve your sponsorship early to receive recognition in the conference registration site as well as the meeting brochure. Please respond with your sponsorship confirmation by **January 31, 2016.**

Interested parties are encouraged to contact Cheryl Gendron, Director of Communications & Events at cheryl@nebb.org.

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(Model HM685 only)

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2016 NEBB Annual Conference

Albuquerque

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April 14-16

Hyatt Regency Downtown

Registration is now open!

https://nebb.cvent.com/2016AnnualMeeting