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2023 – Quarter 4



Cover Story

Accommodating Mental Healthcare in the Emergency Department: Makeover or Move Over



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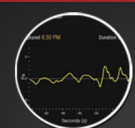
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President's Message



It is great to say hello to everybody!!! I'm Luis Chinchilla and I am honored to be your NEBB president for the 2023-2024 period. I would like to share some info about myself: I'm a chemical engineer with two masters degrees in business administration, three NEBB professional certifications and a graduate of the executive program on artificial intelligence from Carnegie Mellon University in the USA. I'm 100 percent "Tico" (native from Costa Rica) and the firm I work with is OPIA Operaciones e Ingeniería de Avanzada de Centroamérica, S.A.

Becoming a NEBB president has been a journey and continues to be a daydream experience! To me, NEBB represented a complete change of life—an inflection point in my professional career. I was well into my career in corporate management of a multinational company when I became familiar with NEBB, and that was the beginning of the new life with NEBB on my back. NEBB is the best organization out there to form professionals, in what I would consider applied building engineering sciences, in a world that is continuously evolving. Each one of us is part of the history being written as we speak, which is an opportunity that does not come around that often.

I cannot emphasize how great this organization is—the NEBB staff, the fellow members at the EFC and the Board, the Chapters, the Certified Technicians, the Certified Professionals and the Certified Firms that contribute every day and open endless opportunities for those bearing the NEBB certification, as well as those that will become certified.

We have enjoyed of a wonderful NEBB national event in Monterey, CA, at which we enriched ourselves with an excellent set of speakers sessions, great technical demonstrations by our participant vendors, and more importantly, getting ourselves acquainted with all the great developments achieved by all the members continuously building and aligning the organization NEBB's strategic plan.

It is in light of this strategic plan that I would like to request all of the NEBB membership to keep up the leadership that the world expects from the best engineering firms and professionals—the NEBB certified ones. Through those efforts, we will make the world a better place with efforts like decarbonization, energy conservation, industry transformation with emerging technologies, data expertise (and actions driven based on it) and best standards developers, just to mention some. All of them are highly valued by our customers and the industry segments that interact with all NEBB disciplines.

NEBB staff and committees have taken to heart the development and offering of great programs and initiatives such as the NEBB Learning Center (NLC), Robert B. Gawne Tech Training Center, simpler processes for CT/CP and firm certification and re-certification, renewed training programs, test alternatives in imperial and metric units for some disciplines, development of new NEBB Procedural Standards, quicker access to documentation and relevant materials, launching a new marketing plan for the benefit of NEBB, and above all, having multiple service avenues to ensure that your needs are promptly and carefully taken care of.

Let's continue working together, fearless of the challenges ahead of us, joining those disciplines that you are passionate about and ensuring we always transpire the NEBB essence in all we do.

NEBB's initiatives for 2024 are aimed to continue energizing ourselves and I'll be elaborating more during the upcoming quarterly communications.

Pura Vida!!!

Luis Chinchilla
NEBB President

Mensaje del presidente

¡Es un placer saludarlos a todos! Mi nombre es Luis Chinchilla y tengo el honor de haber sido designado como presidente de NEBB para el período 2023-2024, por lo que me gustaría compartir un poco acerca de mi persona: soy ingeniero químico con dos maestrías en administración de empresas, 3 certificaciones profesionales de NEBB y completé el programa ejecutivo en Inteligencia Artificial de la Universidad Carnegie Mellon en EUA. Soy 100% "Tico" (nativo de Costa Rica) y la firma con la que trabajo se llama OPIA Operaciones e Ingeniería de Avanzada de Centroamérica, S.A.

¡Convertirse en presidente de NEBB ha sido un gran viaje y sigue siendo una experiencia de ensueño! Para mí, NEBB representó un cambio de vida completo, un punto de inflexión en mi carrera profesional, ya que me encontraba bastante entrado en mi desarrollo gerencial en una empresa multinacional cuando me familiaricé con NEBB y ese fue el comienzo de una nueva vida con NEBB en mi espalda. NEBB es la mejor organización que existe para formar profesionales en lo que yo consideraría ciencias aplicadas de la ingeniería de los edificios, en un mundo que está en constante evolución. ¡Ver a cada uno de nosotros como parte de la historia que se escribe mientras hablamos es una oportunidad que no se presenta frecuentemente!

No puedo dejar de enfatizar cuán grandiosa es esta organización, el staff de NEBB, los miembros del EFC y la junta directiva, los capítulos, los técnicos, los profesionales y las firmas certificadas que contribuyen todos los días para abrir oportunidades infinitas para aquellos que llevan la certificación NEBB, así como aquellos que se certificarán en el futuro.

Hemos disfrutado de un maravilloso evento nacional de NEBB en Monterey, CA, en el cual nos hemos enriquecido con un excelente conjunto de conferencias, grandes demostraciones técnicas por parte de nuestros proveedores participantes y lo más importante, familiarizarnos con todos los grandes desarrollos que han sido realizados por todos los miembros, que construyen continuamente la organización alineada con el plan estratégico de NEBB.

Es a la luz de este plan estratégico que me gustaría solicitar a todos los miembros de NEBB que mantengan el rol de liderazgo que el mundo espera de las mejores empresas y profesionales de ingeniería –los certificados por NEBB. A través de estos esfuerzos construiremos un mundo mejor en materia de descarbonización, conservación de energía, transformación de la industria con tecnologías emergentes, expertos en datos e impulsores de acción basados en ellos y desarrolladores de los mejores estándares, solo por mencionar algunos, todos ellos altamente valorados por nuestros clientes y por los segmentos de la industria que interactúan con todas las disciplinas de NEBB.

El staff y los comités de NEBB se han tomado muy en serio el desarrollo y la oferta de excelentes programas e iniciativas como el Centro de Aprendizaje NLC de NEBB, el Centro de Capacitación Tecnológica Robert B Gawne, procesos más simples para los CT/CP y las firmas para certificación y recertificación, programas de capacitación renovados, alternativas de exámenes en unidades imperiales y sistema métrico internacional para algunas disciplinas, desarrollo de nuevos estándares de procedimientos, acceso más rápido a documentación y materiales relevantes, lanzamiento de un nuevo plan de mercadeo en beneficio de NEBB y sobre todo, contar con múltiples canales de servicio para garantizar que sus necesidades sean atendidas con prontitud y esmero.

Sigamos trabajando juntos, sin miedo a los desafíos que tenemos por delante, uniéndonos a aquellas disciplinas que nos apasionan y asegurándonos de que siempre transmitamos la esencia de NEBB en todo lo que hacemos.

Las iniciativas de NEBB para 2024 tienen como objetivo continuar energizándonos, para lo cual daré más detalles durante las próximas comunicaciones trimestrales.

¡Pura vida!

Luis Chinchilla
Presidente de NEBB



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NLC

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Letter from the Editor



With the end of the year on the horizon, there is no better time for reflection than now. Amid the whirlwind of the day-to-day and rushed routines, it's easy to gloss over the amount of growth and notable experiences that can occur over a mere 12-month period. Pausing to recognize (dare I say celebrate!) all that's been accomplished, and all the lessons learned along the way, is essential for building upon such progress and setting out to take on a new year with clarity and intention.

In 2023, NEBB proved unwavering commitment to building performance and high standards and compliance within the building industry. NEBB's reach continued to expand this past year, attracting professionals from diverse backgrounds across the globe, all sharing a common dedication to excellence in their chosen discipline(s). The NEBB Professional helps highlight the work of these incredible professionals, but considering the volume of outstanding work NEBB certified professionals do each year, four issues can hardly cover it all.

With a growing emphasis on reducing carbon footprints, the integration of renewable energy sources and energy-efficient HVAC systems moved to the forefront, beginning from the initial stages of building design. As owners aimed to repurpose existing buildings through energy efficiency retrofits, NEBB firms have been sought out for retro-commissioning services to improve energy efficiency and reduce operating costs.

A heightened focus on health and wellness in buildings, post-pandemic, increased emphasis on indoor air quality and occupant safety, from fume hood controls to the design of healthcare spaces to accommodate mental healthcare patients. (See our feature story on page 8.)

Next year, I predict we will see a healthy uptick of many existing industry trends, along with the further adoption of long-existing tools like BIM, energy modeling, and automation. Collaborative opportunities through technologies like virtual reality and digital twins will move the industry forward. The rise of smart buildings will continue to offer NEBB firms opportunities to specialize in commissioning and optimizing these systems for maximum efficiency and user comfort. Many will likely work on net-zero projects and buildings that produce as much energy as they consume, as NEBB firms excel in delivering high performance buildings. Time will tell, but from where I stand, the opportunities for NEBB firms to add value to industry projects in 2024 appear vast.

I am grateful for the many magazine contributors I have had the pleasure of working with throughout 2023, and I look forward to continuing to collaborate and learn from many new members of the NEBB community in 2024.

Kerri Souilliard,
Editor



CONTRIBUTORS



► **Belinda Currin**, AIA, CHC, ACHA, NCARB, is a Board-Certified Healthcare Architect, providing planning, design and construction management services to Behavioral and Medical Healthcare clients for a total of almost 30 years, providing patient-centered design for the last 10 years as owner of Currin Design Consulting, LLC. Belinda bases her professional practice on a foundation of unmatched empathy for the effect of the built environment on the patients as well as their caregivers; believing that the Environment of Care's design has a strong influence on the patient's recovery journey.



► **Ryan Chang** is the senior mechanical engineer at TAB Engineers, Inc., Japan. He has received the honor of being a TAB and commissioning CP since 2005, and he enjoys serving as a volunteer member of the NEBB TAB Committee.



► **Chip Albright** is the founder and President of Fume Hood Certified. He has 40 years of experience with fume hoods and lab ventilation. He operates under the motto of Making Labs Safer one fume hood at a time.



► **Brian Hill**, PE is a Mechanical Engineer at AccuTec Services, Inc. in Lee's Summit, Missouri. He is a graduate of The University of Missouri - Kansas City and holds NEBB Professional Certifications in Cleanroom Performance

Testing and Testing, Adjusting, and Balancing. Brian currently serves on the NEBB Board of Directors and has been involved in various facets of NEBB since 2012.



► **William Bailey** has been a member of NEBB since 1997 and a member of ASHRAE since 2003. Hobbies are fishing for Largemouth and Smallmouth Bass on the Tennessee River/ Kentucky Lake. Loves teaching

classes related to HVAC for Associated Builders and Contractors and Service Group at NMC.



► **Jeff Schools** is the Past President of NEBB and currently works with the NEBB Headquarters team, NEBB committee chairs, and Compliance members as NEBB Technical Director.

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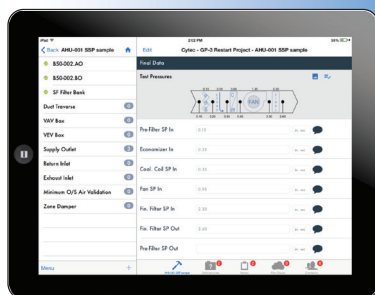
SYSTEM/UNIT: AHU-01

Unit Data	
Unit Manufacturer	Trane
Unit Model Number	ADB0JU-210465
Unit Serial Number	254y9y9nr77arip
Unit Discharge	Horizontal

Starter Data	
Starter Manufacturer	See Photo

Test Data			
	Design	Actual	%
Total Airflow	5000 CFM	4500 CFM	
O/A Airflow	500 CFM	400 CFM	
Return Airflow	4500 CFM	4000 CFM	

Starter Manufacturer Photo:	
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Executive Vice President's Message

In the ever-evolving landscape of professional development and skill validation, certification associations play a pivotal role in shaping industries and fostering excellence among professionals and technicians. The past year has proven to be a remarkable one for NEBB, with growth, innovation, and positive impact. As I reflect on the past 12 months, I am delighted to celebrate a year of success for NEBB.

One of the most significant indicators of success for any certification association is the number of individuals and firms who have successfully earned their certifications. In the past year, NEBB witnessed continued growth in the number of newly certified firms and individuals. The demand for certification in the field surged as firms, professionals, and technicians recognized the value of holding a credential from NEBB.

NEBB's commitment to maintaining rigorous standards and keeping its certifications relevant to industry needs has undoubtedly contributed to this growth. In a rapidly changing world, it is essential for certification associations to stay at the forefront of industry developments and best practices.

NEBB has demonstrated an unwavering commitment to continuous innovation in its training, education, and certification programs. Staff and volunteers, united by a shared purpose, are the driving force behind NEBB's continued and future success. Together, we journey toward a common goal, merging our skills, dedication, and enthusiasm to achieve greatness and make a lasting impact for years to come.

Success for NEBB goes beyond just issuing certificates. With the NEBB Online Learning Center (NLC), NEBB continues to place a strong emphasis on ongoing professional development for its certification holders. Through webinars, seminars, training materials, standards, and online resources, NEBB continues to provide valuable opportunities for the community to learn, grow, and network.

The commitment to supporting the growth of our certified firms and individuals has not only enhanced NEBB's reputation, but has also fostered a sense of belonging and pride among certification holders. Many professionals and technicians view their association as a source of guidance and support throughout their careers.

Perhaps one of the most remarkable aspects of NEBB's successful year is the unwavering commitment to maintaining a culture of excellence and ethics. Leadership, staff, and the Compliance Committee have been proactive in addressing any concerns related to certification compliance, ensuring that the NEBB certification continues to hold high value and integrity.

By promoting a strong code of ethics and regularly auditing certification processes, NEBB has set a high standard for professionalism within our industry. This commitment to ethical practices has further cemented NEBB's reputation as a trustworthy and respected certification authority.

The past year has undeniably been a year of success for NEBB. The growth in certification holders, strategic partnerships, commitment to innovation, focus on professional development, and dedication to ethical practices have collectively placed NEBB above the rest.

As we look forward to 2024, it is evident that NEBB's success story is far from over. This year's accomplishments serve as a testament to what can be achieved when an organization is driven by a mission to elevate standards and empower individuals to reach their full potential. Thank you to the volunteers and staff for being a part of this incredible journey, and here's to an even more successful and fulfilling year ahead.

From the desk of:
Tiffany J. Meyers





Accommodating Mental Healthcare in the Emergency Department: Makeover or Move Over

By Belinda Currin

The growing (overwhelming may be a better description) challenge today in emergency departments is how to adequately and respectfully provide a safe and comfortable place for patients in crisis, experiencing mental health conditions and illnesses ranging from mood disorders (anxiety, depression, mania) to substance use disorder, PTSD, psychosis and various other conditions which can severely impact day-to-day living, self-care and possibly the ability to relate to others.

The mental health environment of care design continues to develop as an ever-changing entity in terms of determining how to provide a safe and respectful space for assessment, respite, and recovery for patients in crisis. Facility managers, clinical staff, and designers are like a three-legged stool: all three components are necessary to function safely. The commissioning process plays an important role in the testing and verification of these spaces in meeting the requirements of the design to provide fully functional spaces described below.

Mental health is evolving from its stigma to acknowledgment as a treatable/maintainable illness much like other chronic medical conditions that can be maintained with the support of various therapies, medications, and where applicable, relocation from the environment/situation that led to the condition of crisis. The emergency department is the first stop for those needing emergency treatment or stabilization for a physical condition, and this is also true for those in mental crisis, needing emergency treatment or stabilization for a mental condition.

Patients typically enter the emergency department by ambulance, police escort, or 'walk-in' for both physical and mental emergency care situations. The emergency department is equipped to provide emergency medical health care at various levels of acuity:

Level 1- Immediate: Life-threatening

Level 2- Emergency: Could become life-threatening

Level 3-Urgent: not life-threatening

Level 4- Semi-Urgent: not life-threatening

Level 5- Non-Urgent: needs treatment when time permits.

On the other hand, many emergency departments are equipped to provide emergency mental health care on a lesser level (not so great or important as the other) regarding the availability of staff trained to treat/work with patients in mental crisis, provision of a safe physical environment, and accommodation of a patient's longer stay while waiting for a bed in a suitable facility which could be several days. Clinical staff in the emergency department have expressed their lack of training to work with patients in mental crisis regarding maintaining their own safety when treating and working to safely de-escalate a crisis in which a patient expresses violent, unpredictable behavior.

Equally important is the provision of a therapeutic environment of care for a patient whose length of stay may exceed 23 hours. Room readiness is key when preparing an exam treatment room for a behavioral health patient who may or may not be in crisis to the level of suicidal ideation, harming others or themselves via weaponization of standard items found within the exam room (including items obtained along the way to the exam room from triage). Dual training in treating the physical and mental health of patients in emergency situations would benefit clinicians working in the ED regarding their own safety, the patient's safety with respect to mitigation of risk within their environment of care, and the patient's perception of the care received which is often based on how they are treated or cared for and the environment in which they are placed for assessment and treatment.

Room readiness includes providing finishes and fixtures durable against impact, tampering, and weaponization for activities of self-harm and or harm to others. A review of the wall assembly construction, actual fixture attachment to walls/ ceilings, fixture-specific fasteners (screws, clips, etc), the durability of protective covers on devices (thermostats, medical gases, sink plumbing), and impact resistance (lights, fire alarm notification devices, occupancy sensors and switches, outlet cover plates) are a good starting point. The placement of devices and fixtures is just as important as the selection of the device/fixture. When consid-

ering fixture/device placement, patient and staff access are the primary drivers. Patient access should be thought of in terms of the potential for the fixture to be manipulated, damaged, or destroyed. Ceiling-mounted items (lights, HVAC grilles and diffusers, smoke detectors, occupancy sensors and other devices) should be coordinated with furniture locations when possible so that furniture does not provide a way to reach the device. Smoke detectors and occupancy sensors are misidentified by patients as surveillance cameras, often damaged or disabled to maintain their privacy. Placement of area floor drains in bathrooms is another item to be considered regarding their proximity to the toilet for overflow/flooding mitigation and the drain cover's elevation below finished floor regarding the allowable depth of water (supporting drowning activity) should the drain become disabled. When selecting 'behavioral health safe' fixtures, caution should be taken with interpreting the term to mean it is free of risk regarding self-harm, and its ability to withstand impact and tampering activities.

Just as important as providing an environment of care that is safe physically, the environment of care also needs to feel safe psychologically to a patient so that it does not contribute to the escalation of the patient's



condition by being made to look sterile or institutional, and often deficient in preferred acoustic, lighting and temperature control measures.

Acoustic measures to be considered are the inclusion of sound-absorptive finish materials that can also be cleaned, higher performing wall and ceiling assemblies regarding sound transfer, reverberation and absorption like the 'hum' of light ballasts, HVAC duct noise from whistling air or unit issues, as well as the use of face dampers, nearby alarms of IV pumps and other monitoring devices, plus fire alarms when activated. On higher acuity or crisis units where the patient is never left alone, consideration of a silent alarm feature should be given for the various systems, in which staff are alerted via a personal notification device and able to alert the patient of an emergency when necessary, eliminating agitation from the fire alarm horn activation noise, as well as constant overhead paging and announcements. White noise is all too often the solution, which does not always have a positive effect on

patients, but instead escalates their condition with the constant background static sound. A positive distraction regarding acoustic provisions is soothing sounds of nature which are available through numerous internet apps, able to be provided in the patient environment of care via Bluetooth devices.

Lighting measures to be considered include the fixture's capability for dimming to provide lower light levels when needed, as well as the fixture's capability to provide indirect lighting instead of direct light. Light level control is preferably located in a staff-only area to avoid nuisance or dangerous conditions created when patients have access to the controls or keyed switches in the room or directly outside of the room where a patient may have access. Lights on occupancy sensors in bathrooms should be avoided if possible to eliminate the lights 'going out' when a patient is still using the bathroom. An LED multi-color lighting option has been successful in support of circadian rhythms as well as patient preference for their environment. Daylighting and views of the exterior offer the patient confirmation of whether it is day or night along with other environmental awareness benefits. Blinds are to be provided within protective enclosures, sealed inside of the window unit between two pieces of glass with control provided both on the staff side via thumb turn (wheel) or keyed control.

Temperature control is another consideration regarding patient control over their immediate environment with the actual control for their room located in a staff-only area. Some patients find moving air to be a source of comfort, as facilities provide fans in a protected enclosure or within the wall where they have control of its on/off function.

Emergency Departments, when feasible, would benefit from identifying a group of rooms or 'area' within the ED that is designated to provide a more controlled environment of care for treatment of behavioral health patients. The designated behavioral health treatment area could be 'swing beds,' convertible to providing medical treatment in times of high census with the proper protective measures of medical gases, outlets, lighting, plumbing, ceiling and wall construction, as not to take away from the quantity of medical beds avail-



able. The designated behavioral health treatment area or identified group of 'safe' rooms would be best suited located away from trauma or high intensity treatment spaces which typically experience high levels of activity, acoustics and lighting; mitigating the behavioral health patient's exposure to additional environmental stressors, possibly escalating their condition.

In some cases, elopement of the patient is an issue, especially if they are unwilling to volunteer or incapable of volunteering for hospitalization or treatment, requiring an emergency custody order to be issued by the magistrate when there is a substantial likelihood that the person will, in the near future, cause harm to himself or others as evidenced by recent behaviors. To assist in deterring elopement of the patient, doors would benefit from fail-secure controlled access hardware functionality, and where feasible, doors be provided in a series on an interlock function. The interlock function for doors in a series allows only one door to open at a time, and once re-engaged with its strike, the other door is able to open. The interlock functionality is important where units are supported by dietary and housekeeping support staff, as well as clinical staff entering and exiting the unit frequently where a patient may directly walk out of the secured unit. The interlock function can be controlled by card access control devices, activated with access cards carried by staff, swiping to activate each door once the other door is closed. Or, a remote door operator control, which is operated by a staff person able to see the doorway and interact with the door user, approving their entry/exit to the unit. This, with respect to patient privacy and dignity, an exit/entrance close to the unit or designated behavioral health treatment area is recommended where feasible so that the patient's route to the treatment area is expedited, minimizing their exposure to medical traumas in the ED, and in turn, minimizing the risk of unexpected interaction and exposure to others. If there is opportunity to create a 'swing' unit to accommodate behavioral health patients, there should be multiple levels of care, ranging from a High Acuity level of care (private room) to a Moderate Acuity level of care where patients have the freedom to leave their private room and occupy an open group milieu area supervised by staff and interaction with other patients and therapeutic activities may be available to a Low






acuity level of care accommodating patients with open bays of seating like recliners with free interaction within the space.

Enabling the emergency department to effectively accommodate behavioral health patients is the goal, based on staff and patient safety, durability of the built environment, and preserving the dignity of the patient during their time of crisis. As designers, facility managers, and clinicians, we all have a key role in providing a suitable and supportive environment of care. Commissioning also plays an important role with a multitude of systems and equipment from lighting and lighting control, security and door interlocks, noise control, and temperature control. Commissioning not only benefits the facilities personnel by providing verification and documentation of systems and component operation, but also the users and patients within fully functional systems and components. Empathy should be equal when caring for, designing, building, and maintaining environments of care for those in both emergency medical crises and emergency mental crises.

An environment of relatability or comfort is important when establishing patient's trust, encouraging their participation in treatment, and starting their recovery process. An environment that builds in safety through fixture selections and placement, the durability of finishes, and tamper resistance is important for risk mitigation of patient self-harm and harm to others' activities. Such spaces have also been shown to support staff retention and recruiting efforts when they feel safe. Crisis Receiving Centers (CRCs) and Crisis Intervention and Therapeutic Assessment Centers (CITACs) continue to gain momentum in various communities, providing emergency mental health treatment as a diversion from the emergency department, intending to provide mental health focused care and allowing the emergency department to focus on providing medical health focused care. As not all communities have access to these specialty mental health treatment centers, the hospital's emergency department will continue to be the epicenter for providing emergency medical care and mental health crisis intervention and stabilization services, while striving to provide adequate physical environments of care in which to do so.

The first step in determining each emergency department's 'readiness' to support mental health care is to conduct Safety Risk Assessment (SRA) of the physical environment that the behavioral health patient will have access to. The SRA should be facility-specific, identifying the risks, known and perceived, along with the mitigation measures necessary to provide a safe and supportive treatment environment for that particular population. The SRA should be produced as a team effort, consisting of key facility management persons, key clinicians, and subject matter experts in the design and construction of the physical environment for behavioral health patient care. Upon completion of the Safety Risk Assessment, the clinical staff's assessment of current and projected behavioral health treatment caseloads based on historical evidence and localized patterns and funding availability, the emergency department's direction of 'Makeover' (renovation) or 'Move over' (relocate the BH specific treatment rooms out of the ED trauma area) can be determined. ●



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Cool Biz: Energy Conservation Efforts in Japan

By Ryan Chang

The Cool Biz initiative, which originated in Japan during the summer of 2005, was introduced by the Ministry of the Environment as a strategy to reduce domestic electricity consumption by minimizing the reliance on air conditioning systems. This endeavor involved a pivotal alteration to the standard office air conditioner temperature, setting it to 28°C (approximately 82°F), and implementing a more relaxed summer dress code within the Japanese government bureaucracy. This allowed government staff to work comfortably in warmer conditions, ultimately paving the way for the campaign's subsequent adoption by the private sector.

The concept was initially proposed by Yuriko Koike, who served as the Minister at that time, within the administration of Prime Minister Junichiro Koizumi. Notably, all government leaders actively participated in the Cool Biz initiative. Prime Minister Koizumi, in particular, frequently appeared in public without wearing a tie or jacket, significantly increasing the visibility and impact of the campaign.

The Ministry of the Environment (MOE) directed central government ministries to maintain air conditioner temperatures at 28°C throughout the campaign's duration. Originally scheduled from June to September, the campaign was extended starting in 2011, following electricity shortages resulting from the 2011 Tohoku earthquake and tsunami. As of now, the Cool Biz campaign spans from May to October each year.

The Cool Biz dress code recommendations include starching collars to keep them upright for better comfort, opting for trousers made from breathable and

moisture-absorbent materials, and encouraging the use of short-sleeved shirts without jackets or ties. However, there was some initial confusion among workers about adhering to the new business casual guidelines. Many employees initially arrived at work with jackets in hand and ties in their pockets. Some government workers even expressed concerns about the perceived impoliteness of not wearing a tie when meeting counterparts from the private sector.



Interestingly, some private companies, such as Toyota and Mitsubishi Motors, went a step further by explicitly instructing their employees not to wear jackets and ties, even during business meetings with partners.

On October 28, 2005, the Ministry of the Environment (MOE) released the findings of an assessment of the Cool Biz campaign's impact. The MOE had conducted a web-based questionnaire survey on September 30, 2005, involving approximately 1,200 individuals randomly selected from an internet panel assembled by a research company. According to the survey results, a noteworthy 95.8 percent of respondents were aware of the Cool Biz initiative, with 32.7 percent reporting that their workplaces had raised the air conditioner thermostat settings compared to previous years. Based on these statistics, the Ministry estimated that the campaign had led to a reduction of approximately 460,000 tons of CO₂ emissions—equivalent to the emissions produced by approximately 1 million households for a month.

In 2006, the results of the campaign showed even more promising outcomes, resulting in an estimated reduction of 1.14 million tons in CO₂ emissions, equivalent to the emissions from around 2.5 million households for a month. The Ministry expressed its commitment to persistently promote the practice of maintaining office temperatures no lower than 28°C during the summer, with the ultimate goal of ingraining the Cool Biz concept firmly into society.

Subsequently, in July 2009, the Cabinet Office unveiled the results of a new questionnaire survey. This survey indicated that 91.8 percent of respondents were familiar with the Cool Biz campaign, and an impressive 57 percent of them had actively implemented the campaign's principles in their daily lives.

Additionally, the Ministry of Economy, Trade and Industry (METI) analyzed that the Cool Biz campaign increased replacement demand for clothing and generated positive macroeconomic effects on the GDP by 18 billion yen for summer 2005. Dai-ichi Life Research Institute announced that the total economic effect was more than 100 billion yen in 2005.



Beyond Cool Biz

Following the Tōhoku earthquake and tsunami in March 2011, the shutdown of many nuclear power plants for safety reasons led to energy shortages. The government announced the new Super Cool Biz Campaign in response to power shortages and the need to conserve energy usage by at least 15 percent.

The Super Cool Biz Campaign built upon the Cool Biz campaign, suggesting guidelines to help reduce energy use both at work and at home. To further conserve energy, the government also requested switching off computers not in use, called for shifting work hours to the morning, and taking more summer vacation than usual.

The government further loosened the Cool Biz summer dress code in the name of Super Cool Biz. The government launched a Super Cool Biz casual dress code campaign to encourage government and private company workers to wear outfits appropriate for the of-

Japanese Government Cool Biz Summer Dress Code

Not required to wear:

- Necktie
- Jacket
- Long-sleeve shirts

Allowed to wear:

- Half-sleeve dress shirts
- Kariyushi shirts (Okinawan Aloha shirt)
- Polo shirts
- Hawaiian shirts/Aloha shirts
- Chino pants (lightweight material, typically cotton, like khakis)
- Sneakers

Not allowed to wear:

- Exercise shirts
- Shorts
- T-shirts
- Jeans

fice yet cool enough to endure the summer heat. Polo shirts and business casual wear were allowed, while jeans and sandals were also acceptable under certain circumstances.

June 1 marked the start of the Ministry of the Environment's Super Cool Biz campaign, with "full-page newspaper ads and photos of ministry workers smiling rather self-consciously at their desks wearing polo shirts and colorful Okinawa Kariyushi (Aloha) shirts." The Super Cool Biz campaign was again repeated in 2012.

What exactly does Cool Biz and Super Cool Biz mean for those of us working in Japan? Depending on your company, the answer could be anything from cooperating with drastic energy-saving measures, or nothing very noticeable at all. However, many Japanese companies are taking the government guidelines seriously and reducing their energy consumption by asking their employees to enthusiastically comply. The Cool Biz campaign is still used to this day to curb energy consumption and reduce the risk of overloading the power grid, although participation is not mandatory.

The success of Cool Biz in Japan has since extended to other geographic locations, as well. The South Korean Ministry of Environment and the British Trades Union Congress have promoted their own Cool Biz campaigns since summer 2006, while the United Nations was inspired to launch the "Cool UN" initiative in 2008.

Within Japan, retrocommissioning has played a significant role in complementing the Cool Biz energy campaign, contributing to broader energy conservation efforts across the country. As building energy performance reporting became mandatory under the Energy Conservation Law in 2006 (right around the same time Cool Biz was launched), the popularity of commissioning new buildings in the construction phase gained popularity, as well. When combined with the Cool Biz campaign's emphasis on relaxed dress codes and higher thermostat settings, both retrocommissioning existing buildings and commissioning new buildings can add another layer of energy conservation, contributing to a more sustainable and environmentally friendly approach to cooling buildings and reducing the carbon footprint on a larger scale. ●





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The Myth of Face Velocity Reloaded

By Chip Albright

About 20 years ago, *The Myth of Face Velocities in Fume Hoods* was published. Yet today, little has changed. The misunderstanding about using face velocity to judge containment has actually grown. (Reference *The Significance of Laboratory Fume Hood Face Velocities*, Caoimhín P. Connell).

Many lab personnel erroneously believe that face velocities are an indication of how well a fume hood works. In other words, many believe that a high face velocity equals containment. It does not.

Face velocities are a useful diagnostic indicator in the event that the hood does not perform well, but face velocity should not be used as the method of determining how well a hood contains. Face velocity is only one component of containment. In the ASHRAE 110 Fume Hood Testing protocol, we perform a face velocity profile. We

do a more forensic evaluation of face velocity. This profile reflects the level of turbulence across the face of the hood.

But given air is a fluid, it will flow from high pressure areas to low pressure areas. Face velocity just tells us how fast it is flowing.

Let's examine face velocity more holistically:

Considering the fact that air is a fluid, it follows the same physical laws (fluid dynamics) as does water. Just like water in a river, the stream of water can be calm or turbulent. While the water flowing downstream has a speed, it is the combination of speed and turbulence that determines if we have a smooth flowing river or turbulent rapids.



VS.



Practitioners testing fume hoods have experienced many of these performance issues first hand. But due to complexity of the overall laboratory ventilation system and the holistic relationship between the fume hood, the room conditions and the user, it is hard to bring the issue of fume hood performance into focus.

The subject of the relationship, or lack of relationship, between face velocity and containment is now coming around again for public discussion. In the June 2022 ASHRAE Journal, a technical article was published on this subject: *"Factors Influencing Face Velocity for Fume Hood Containment"* by Kang Chen.

"Although there is a growing consensus that face velocity cannot be applied as a sole evaluation indicator of fume hood containment performance..."

How did we get here? Why does such a misunderstanding exist today?

OSHA requires that hood operators take specific measures to ensure that laboratory fume hoods are functioning properly (§1910.1450(e)(3)(iii)).

What does functioning properly mean? A laboratory fume hood is a hybrid safety device, it is both an engineering control and personal protective equipment (PPE). It falls into the category of an exposure control device. Fume hoods work by capturing the hazards within the fume chamber. Once captured, those hazards are contained within the fume chamber until they are diluted and exhausted. Loss of containment, meaning that the hazards have escaped the fume chamber and have been released back into the laboratory space, is a failure in fume hood performance. Loss of containment is potentially exposing laboratory occupants to hazardous chemicals.

What is face velocity? It is the speed at which air is flowing into the hood through the sash opening. What face velocity really tells us is the volume of air flowing into the hood (speed x sash opening). The volume of air has more to do with dilution than containment. The relationship between fume hood face velocity and fume containment is largely misunderstood.

The characteristics of flowing water in a river are very similar to the behavior of air flow in and around a fume hood. Water naturally flows downhill—air naturally moves from a high-pressure area to a low-pressure area. When a hood is performing best, there is a strong pressure difference between the fume chamber and the lab room, and the turbulence in and around the hood is minimal. The more turbulent the airflow in and around the hood, the more likely there will be loss of containment.

Examining a fume hood's face velocity profile can reveal numerical values that can be an indication of excessive turbulence which can equate to a hood's loss of containment.

Since we are talking about science, let's do a little experiment. Measure a single 12" x 12" grid in the sash opening and place two probes (one positioned vertically and one positioned horizontally) within each grid. Connect both probes to our data logger. We will capture a reading from each probe at the rate of one per second for a full 24 hours.

During this time, normal lab activities continue; people walk by, lab doors open and close many times, and other hoods have their sashes opened and closed as people work. After 24 hours of recording, we have 86,400 data points from each probe. Upon analysis, we determine the average velocity is 96 fpm, but we have readings that deviate as much as 40 fpm from the average. Possibly more notable is the fact that the reading is constantly changing. Any single face velocity reading is just a snapshot.

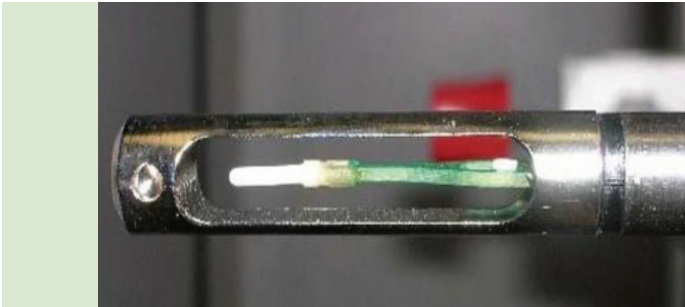
In this photo of an everyday interstate, we cannot determine the speed of the traffic. It is just a snapshot of the



speeding vehicles. An average face velocity reading is not much different. Average face velocity readings suggest movement, but otherwise, are mostly useless at determining actual speed. Snapshots of dynamic processes are not good indicators of what is happening over time.

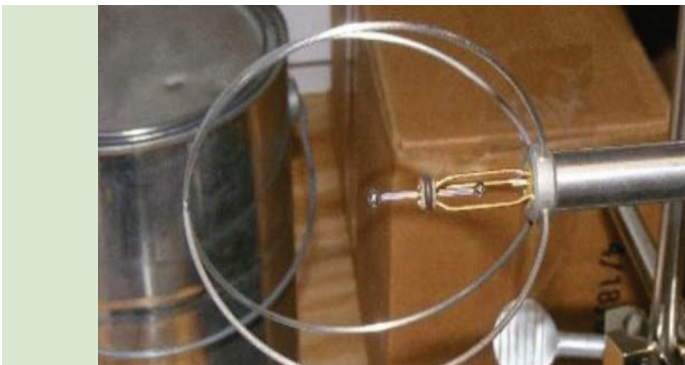
And it only gets more complex. Let's look at the process of taking a face velocity reading.

This is a typical probe. The hot wire sensor is shielded with a protective shroud to minimize damage.



If you look closely at the probe in the photo, the sensor is located inside a space that resembles a tunnel, so only air going perpendicular to the opening is measured accurately. You can change the yaw of the probe and the value of the readings change. At a 30% yaw, the accuracy can drop by as much as 20%. Thus, air being drawn into the hood from above can hit the probe at an angle and produce turbulence and an eddy, resulting in a less accurate reading. Coupled with the fact that the face velocity is ever changing, it becomes very difficult to get good readings.

In comparison, this photo shows a research grade omnidirectional probe.



With this probe, we can capture 10 readings per second. We will also reduce the grid size to a maximum of 6 inches square. With these changes, the face velocity profile will look very different. This is similar to the testing protocol developed by the National Institutes of Health (NIH). This profile will better illustrate the turbulence present at the sash opening and will be a good predictor of containment.

Let's look at a couple of face velocity profiles:

98	99	98	102	98
98	98	98	98	98

This profile is from a fume hood test room (**As Manufactured - AM**) with near perfect room conditions. Note the consistency of the velocities

59	96	76	114	60
32	84	69	89	42

This is the same hood's profile but tested **As Installed (AI)**. The numbers are nowhere near the same. What can be determined from this AI profile versus the AM profile above?

The hood didn't change, so the differences in the numbers indicate problems between the hood and the room conditions.

The real question is, "Is the hood performing safely?" From this face velocity profile can you certify the hood is containing? With the data from these profiles, how can you possibly believe that a single point average velocity is telling you anything?

Smoke and Mirrors? All may not be as it appears.

This is often what the airflow inside the hood looks like.

While there are many testers performing the face velocity profile correctly, few really know how to read/interrupt the data in a way that is actionable.

If I were testing this hood and got these numbers, my next conversation would be with the TAB people. The problem is clearly room conditions.

While many people know how to perform the ASHRAE 110 Testing Protocol, few really understand the significance of the data and how to use it to improve performance.

Smoke and Mirrors?

I became involved with Fume Hoods in 1980 working for a major manufacturer. Being naturally curious, I asked a lot of questions and I was often told the subject was too complex for most people to understand. Unfortunately, the nature of manufacturing and selling fume hoods involves a lot of smoke and mirrors—sad but true. Now 40 years later, little has changed.

The real challenge is that fume hood performance is very dynamic. Based on so many variables, the fume hood may well be containing one minute and be losing containment another. Room conditions, and other conditions, have a significant impact on fume hood performance.

I once heard a well-known expert at an ASHRAE 110 committee meeting state, *“We don’t design hoods to provide robust containment, we design them to perform well on a ASHRAE 110 AM test.”*

We can debate the percentage of installed hoods that are functioning safely, but when looking at hoods that fail to safely perform as indicated by an ASHRAE 110 Tracer Gas containment test, over 80% of those had the prescribed face velocity. This quickly debunks the idea that there is a direct relationship between face



velocity and containment. Why do these hoods fail a containment test?

- **25% of the failures are caused by the design of the actual hood or lab layout issues.**
- **50% of the failures are caused by room conditions. Room conditions are controlled by the laboratory ventilation system which includes not only the hood, but balance of the exhaust and supply air.**
- **25% are caused by user work practices, which involves the fume hood setup or actions the user takes in or around the hood.**

There is some history behind how we got here. In the 1960s and 1970s it was common to install each hood with its own exhaust fan. These hoods had a switch to turn the exhaust fan off and on. Short of being able to hear the fan running, there was no indication of whether the exhaust fan was running or not. Until the OSHA

29 CFR 1910.1450 went into effect, it was common not to see any type of velocity indicating device on a fume hood. But OSHA changed that. After OSHA, (1990s) we began seeing various velocity reading devices added to fume hoods. This is where the concept that face velocity and containment being related really took off. Users were told that if the velocity alarm didn't go into an alarm state, the hood was safe. There was a lot of smoke and mirrors used to sell this philosophy.

In the original article, *The Myth of Face Velocities in Fume Hoods*, author Caoimhín Connell, claims that the hood velocity alarm is sales trickery. In reality, there are no products or testing procedures on the market that can reliably predict containment in real time. Even ASHRAE 110 is only a snapshot of performance.

If we could see the airflow, managing a fume hood's performance would be common sense. But because air is invisible, it is very hard to visualize what is really happening in and around a hood.

If not face velocity, what is a good indication of containment? That is the root problem; there has been no easy way to know. Even ASHRAE 110 Tracer Gas testing is just a snapshot. The test has no realistic dynamic challenges that would highlight weaknesses in the hood. Furthermore, SF6 is 6 times heavier than air, which means when released, it quickly falls to the work surface. This characteristic means that we are stressing the lower portion of the hood and not the upper portion where the vortex is.

Many people don't realize that ASHRAE 110 is not a pass/fail standard, but rather a testing protocol. The 110 standard suggests that the testing procedures should be modified to fit the specific requirements of the lab. Many people refer to the ANSI Z9.5 (Laboratory Ventilation) standard for guidance for what is a pass/fail when using ASHRAE 110. ●

Look for the 2nd installment of this series in our next issue to learn more.

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Q&A

NEBB Across the Generations

Since 1971, NEBB has been serving firms and individuals that deliver high performance buildings and systems. As the premier international certifying association in the building industry today, NEBB thrives as a result of collaboration across various generations that all bring different experiences and perspectives to the table. We sat down with NEBB Board Member Brian Hill to discuss his personal journey with NEBB below:



The NEBB Professional (NP): What generation do you identify with?

Brian Hill (BH): I am a millennial by age, but sometimes I feel like I fit in more with the older generation after being in the industry for a while now.

NP: How did you initially get involved with NEBB?

BH: My first exposure to NEBB was when my dad, Don Hill, encouraged me to go take the TAB CT exam in 2012 to broaden my knowledge and learn to lead the way on projects. He has always been a big proponent of investing in oneself and one's education.

After that, I had the opportunity to attend the Cleanroom Performance Testing seminar in San Jose in 2013. At that seminar, I met a lot of other intelligent professionals from around the world and made connections with people I still talk to today.

NP: What made you want to get more involved?

BH: Making lifelong connections is one of the most significant values in NEBB; there is so much you can learn from other people and their experiences. As I progressed in my professional career, I attended the 2014 Annual Conference in Fort Lauderdale, where I



continued to meet more like-minded people and establish myself within NEBB by taking the Cleanroom Testing Professional exam. Later that year, I was asked to attend an item writing workshop and serve on the Standards Council. From there, I was elected to the board of directors in 2019.

NP: Was it difficult to find the time to volunteer with NEBB?

BH: Volunteering can always be tricky. Trying to find the work/life balance is nearly impossible these days

between working 80-hour weeks, finding time for the gym, social life, involvement with other professional organizations, and a little bit of sleep somewhere in the mix. Sometimes, I find myself going through security at the airport while on a board meeting call.

NP: How do you feel your involvement with NEBB has been an investment in yourself and your career?

BH: To me, there is a lot of value in being involved with NEBB, again from the standpoint of making connections. Plus, giving back to the organization and bettering our brand so that we can help other individuals and firms.

NP: What would you like to see included in the future of NEBB to help adapt the association for generations to come?

BH: When I first started with NEBB, there wasn't a Young Professionals Network; I was the "kid" in the room and at most of the seminars and conferences. It could be intimidating sometimes, but you have to get comfortable with being uncomfortable. Since then, the YPN has started to help get future generations involved in NEBB, and some excellent talent is coming up! I think that seeing some youth involvement in the organization will help us (NEBB) stay current with market trends and attract more members from the younger demographic.

NP: What is the biggest challenge for attracting future generations to this industry?

BH: As a millennial, I was born at an interesting time. We went from calling our friends on a landline in elementary school to everyone having cell phones and being available nearly 24/7 by high school. We quickly adapted to technology, but still have that nostalgic view of how things were when we were kids. I see a future divide between blue-collar/white-collar and office/remote work environments. In our industry, it takes everyone to succeed—and a solid work ethic is the most important piece. ●

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WAR STORIES

Lessons Learned from Built-up HVAC Systems

By William C. Bailey

Beginning with a phone call from a nearby hospital in the Nashville area, our construction division was called to solve a problem. The facility manager of the hospital asked if we could investigate why the air handling unit (AHU) serving the maternity ward patient rooms and floor area was not maintaining space and humidity temperature set points during the mid-summer. The existing unit had served the space for multiple years and had never experienced any issues in the past.

This system was installed by a reputable mechanical contractor who had been doing work for years for the hospital. The installation consisted of a built-up AHU with a supply-fan and cooling coil section, mixed air plenum section (outdoor air (OA) damper intake and return damper)), pressure relief damper, and a return fan. Both supply and return fan speeds were controlled by VFDs through an electronic building automation

system (BAS). There was nothing special about the system. All VAVs and CAVs were primary air with hot water reheat for zone and humidity control. The return duct was ducted into the plenum at the top with the OA intake coming through a wall cavity to the mixing plenum.

Upon arriving on site, I sat down with the facility manager and asked questions to get a better understanding of what was taking place. He mentioned that as the day went on, the system graphics would show the system could not keep up (usually mid-afternoon) and the unit would struggle to maintain the area's comfort levels.

When reviewing the BAS, I observed the supply fan was not achieving the discharge static set point and was operating at 60 Hz. The static set point was 2.0"

wc. (500 Pa), and the fan was delivering 1.3" wc. (325 Pa) to the system. Several VAVs were 100 percent open, and the maximum CFM values were not being achieved. I also observed that the discharge air temperature was not being achieved. The DAT set point was 52oF (11oC) and the actual DAT was 61oF (16oC).

At this time, I decided to go and review the equipment to try and determine what was taking place. My first thought was that we were experiencing issues with OA and return air dampers, causing increased load to the chilled water coil since the area was experiencing warm and humid conditions. As I tried to open the door to the mixed air plenum, it would not open. It appeared the suction static was high to the mixed plenum section. At this point, I decided to take some static pressure measurements to see where we stood. As you can see in Figure 1 below, I experienced very abnormal readings for a typical built-up HVAC system in the mixed plenum section of the unit.

Figure 1				
Initial Static Profile Before Changes were made:				
RA Damper	RF Fan at 60 Hz	SF Fan at 60 Hz	Duct Static Setpoint	Duct Static Actual
-2.0"	-1.50"		2.0"	1.30"

While doing more investigating, it was strange to see that the mixed plenum was so high. I thought maybe the fire/smoke damper was partially closed, causing the high suction static. After all, the unit had been in operation for multiple years with no real issues.

After doing the initial checks and finding the dampers were open as required, I decided to go back and visit the return fan to see what was taking place. It appeared as if the return fan was not operating at all. The VFD showed it was operating at 60 Hz. So, I decided to review the rotation of the return fan. I observed the return fan was rotating backwards.

The facility engineer approved shutting down the system to swap the leads on the incoming power for the return fan VFD. The return fan had a bypass for the VFD as well. The facility engineer reached out to area

nurses and administration personnel to get approval for the brief shutdown.

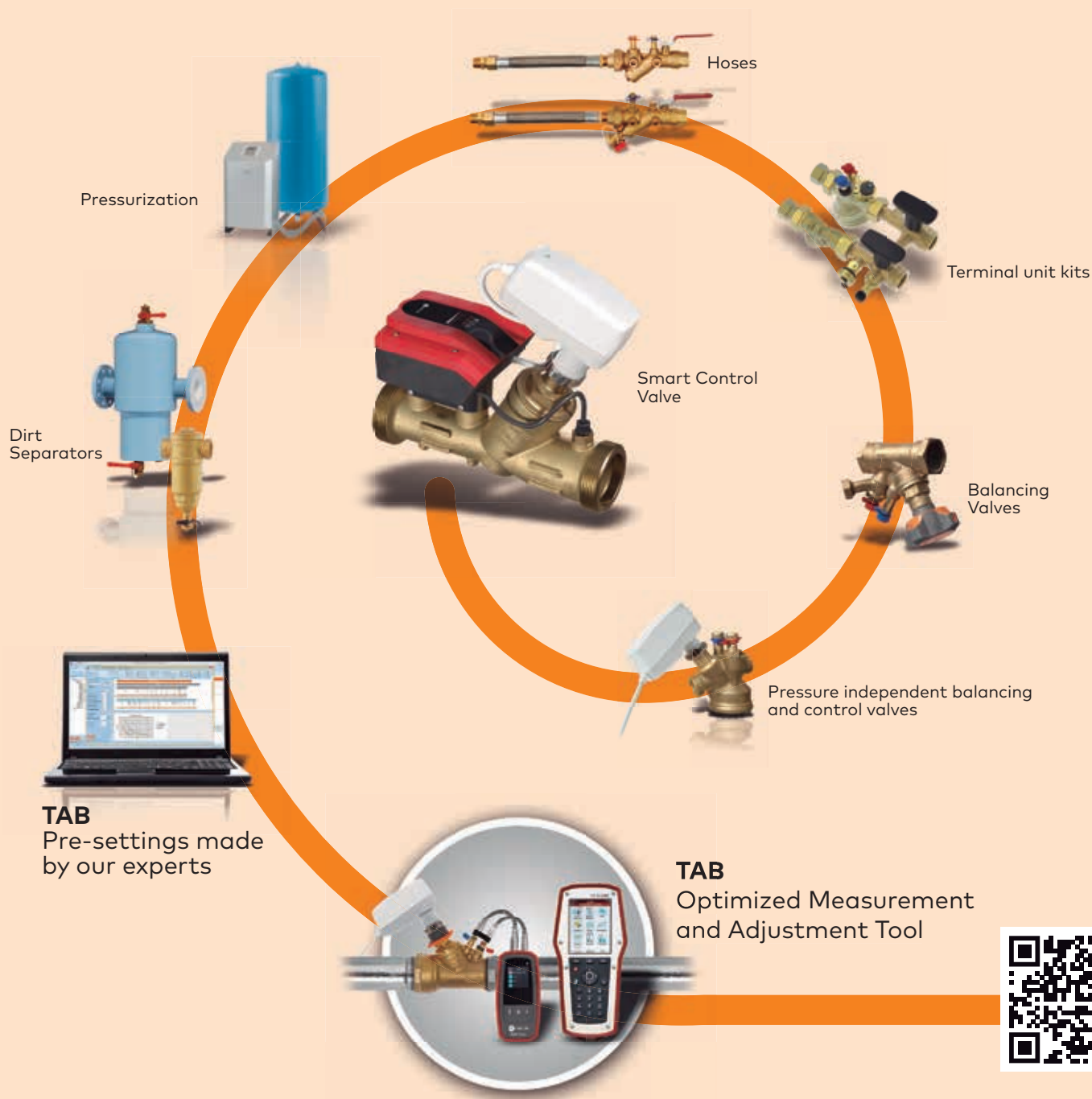
Meanwhile, I asked questions regarding how the system functioned correctly for multiple years and now all of a sudden had issues. I learned that a wall where the VFDs were located had to be relocated and was moved a month prior. At that time, the electrical contractor chose to disconnect and relocate the VFDs without the assistance of the mechanical contractor.

We put the breaker in the off state, checked that we had no live voltage, and switched the wiring on two of the three phases to get the incoming power phased correctly. We also confirmed the bypass rotation was correct, as well. After allowing the VAVs and CAVs to settle out and the air handler to obtain the set point with discharge air and static values, I measured the static readings once again to see how the system was performing. The discharge air temperature was at 52oF (11oC) and modulating the chilled water valve. With the RA fan not performing and running backward prior, there was a substantial increase in minimum outside air due to the high suction static to the mixed air section, causing the overall system to struggle. Below, Figure 2 shows readings as observed when the system settled out.

Figure 2				
After Changes with Fan Direction:				
RA Damper	RF Fan at 60 Hz	SF Fan at 60 Hz	Duct Static Setpoint	Duct Static Actual
-0.30"	-0.85"		2.0"	2.10"

Often, we can look at things in many ways and have many different thoughts or concerns for what is happening with a system when troubleshooting. The key thing is to not forget the common things, which could be the simplest of issues. As we grow and learn systems and how they work, the training and education we pick up and try to pass onto others is essential. This is why NEBB helps to promote CTs and CPs, making us experts in the field of HVAC. Once again, this experience made me feel blessed that I have been with such a great group of people and organization. ●

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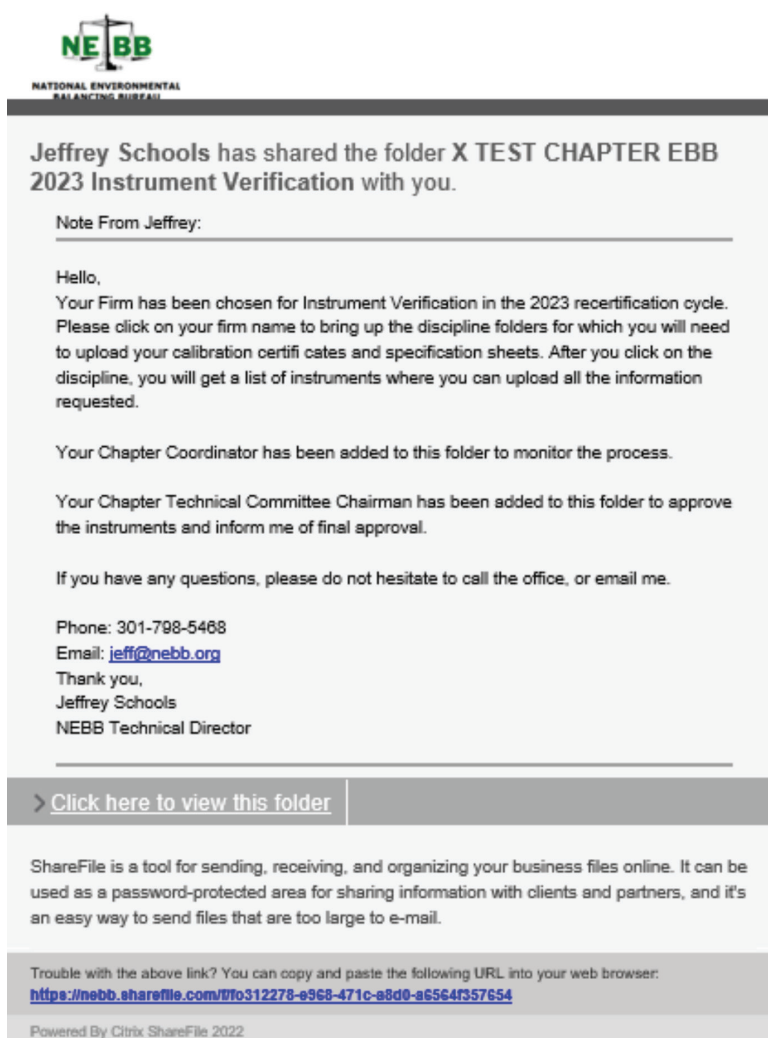
By Jeff Schools

The 2024 Recertification Cycle started on August 1, 2023, and it will end on December 31, 2023. The following article is a reminder to all NEBB Firms selected in this cycle of what to expect.

If your firm is selected, your firm's Dedicated Certified Professional (DCP), along with the Chapter Technical Committee Chair and Chapter Coordinator will receive a notification from the NEBB Technical Director through ShareFile informing you that your firm has been chosen. The notification will look like the sample image in Figure 1.

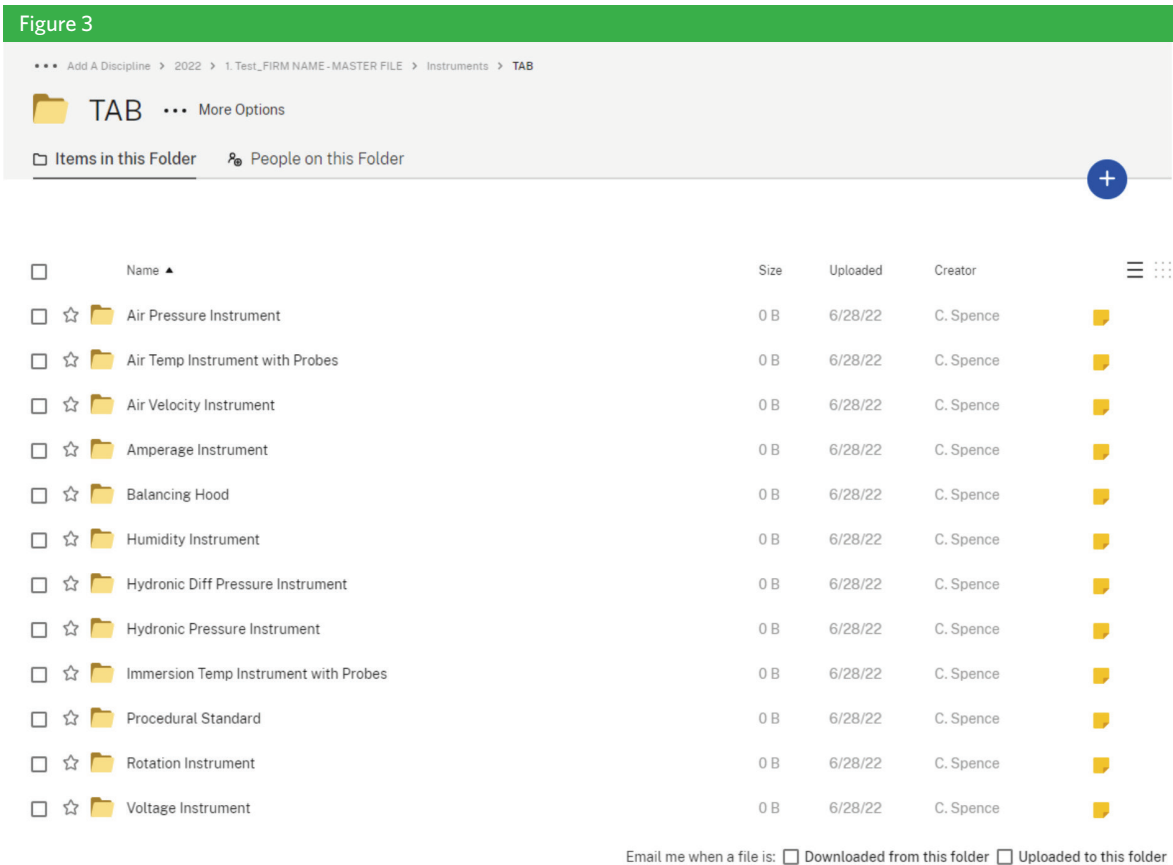
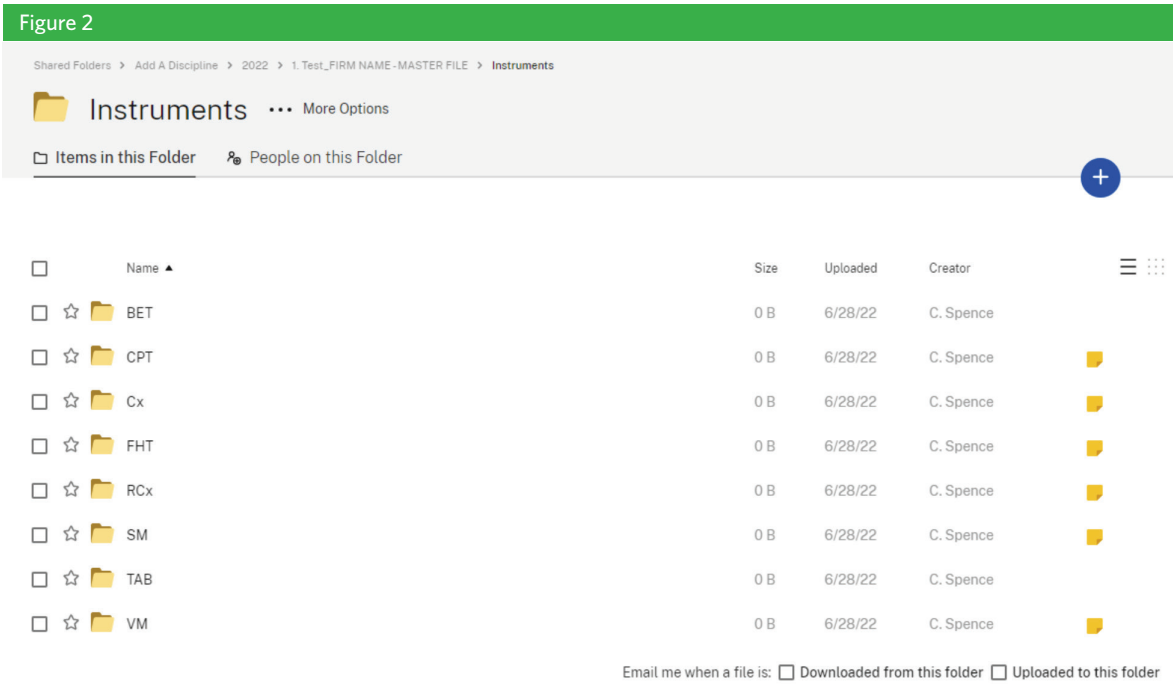
Upon receiving the ShareFile notification, the firm's DCP will be required to submit calibration certificates and specification sheets for the firm-owned instruments in accordance with the NEBB Procedural Standard for each discipline the firm holds. The firm will provide this information by uploading all documents to the ShareFile provided. Figure 2 shows an example of what the ShareFile would look like if your firm held every discipline. If your firm did hold every discipline, you would right-

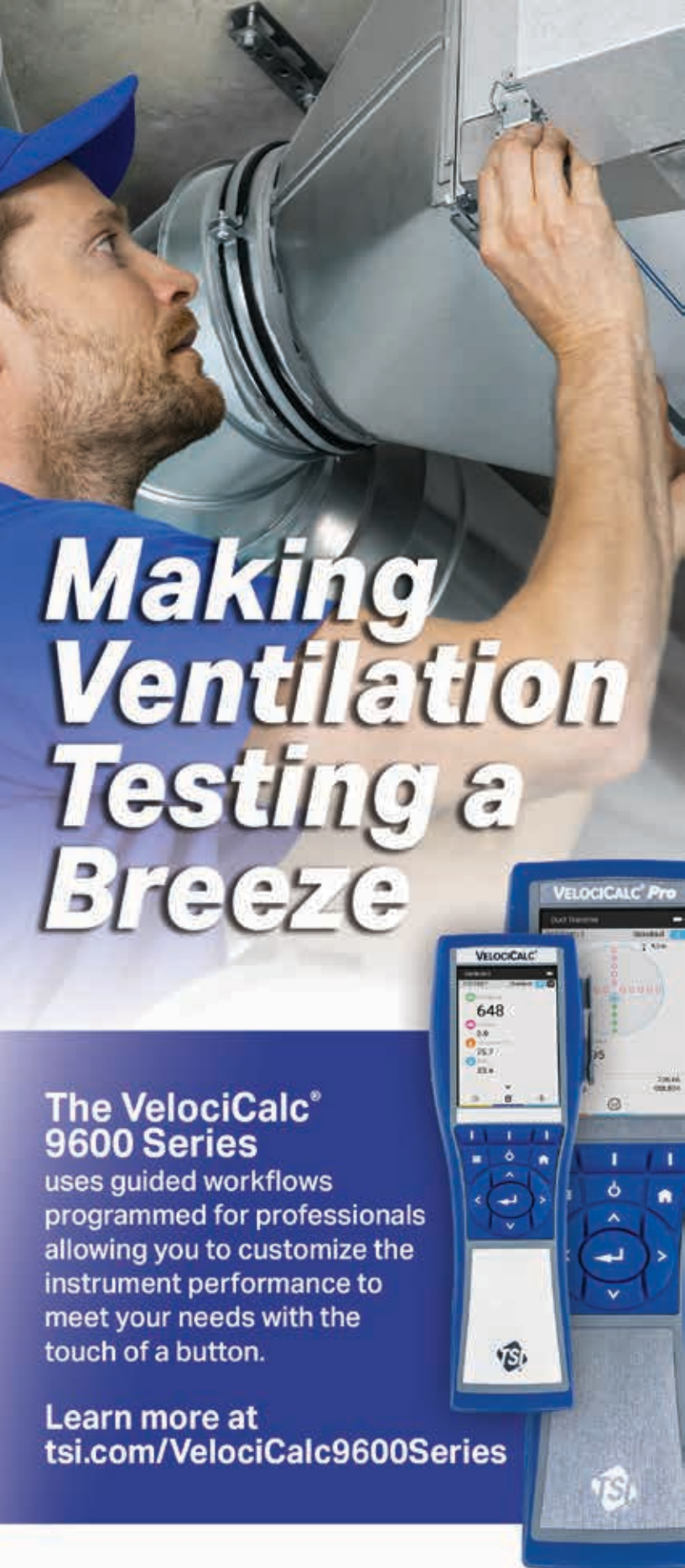
Figure 1



click on each discipline to bring up the instruments for which you need to upload certification certificates and specification sheets.

Figure 3 shows an example of the ShareFile for the TAB instruments. If your firm only holds TAB certification, you will find the TAB folder in your ShareFile and that





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is where you will be able to upload your information by dragging and dropping all required items into each folder.

The Chapter Technical Committee Chairman will monitor these files, and upon completion of the upload, they or another member of the Technical Committee will review the submission. If the submission meets all the requirements, they will email the Technical Director a copy of the NEBB Instrument Approval Form 2024 Cycle and let him know that all is good. If the submission does not meet the requirements, they will email the firm and let them know what needs to be done to meet the requirements until the submission passes.

Once this process is completed, the firm DCP will receive the following email:

Hello,

Thank you for submitting your instruments to the NEBB ShareFile for verification in the 2024 cycle. After review by your Chapter Technical Committee, your submission has been approved and will be added to your Certelligence portal as final.

If you have any questions, please do not hesitate to call the office, or email me.

Phone: 301-798-5468

Email: jeff@nebb.org

Thank you,

Jeffrey Schools, NEBB Technical Director

The 2023 Recertification Cycle went very smoothly, and I anticipate the 2024 going well, too. Many thanks to the Chapter Technical Chairmen and their committees' review and finalization of submissions, as well as the Chapter Coordinators for helping move the process along.

If your firm is selected for the 2024 cycle and you have any questions, please do not hesitate to reach out to me and I will be glad to help in any way. ●



Chapter News

Capital-MarVa Chapter

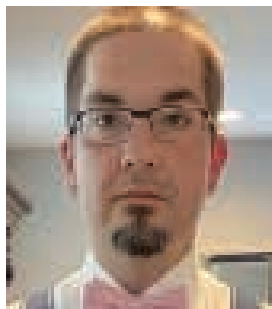
Barbara Huber

We are very pleased to announce that our Chapter has two new Young Professionals Network (YPN) liaisons. The goal of the YPN Chapter Liaison Program is to connect selected individuals with interested Chapter Coordinators to create opportunities and engage YPNers at the local level. It is a resource for young professionals to help grow NEBB.

Please help us welcome both John King and John Raskin as our YPN representatives for Capital-MarVa!



John King



John Raskin

MAEBA Chapter

Trish Casey

MAEBA held its Annual Recertification Seminar on September 17-18, 2023 at the Wind Creek Casino in Bethlehem, PA. The seminar started off with MAEBA President Fred Scafidi introducing Greg Wharton of SMCA. Greg gave a safety presentation to the attendees followed by an update on national activities by NEBB National Vice President Michael Kelly.

Frank Campisino, Senior Engineer at Barton Associates, presented an overview of USP 797 and USP 800 space requirements, system design approaches, and balancing requirements. Daniel Velasques, Vice President of Mechanical Testing, Inc., joined MAEBA for a presentation on Balancing B2 Biological Safety Cabinets and Jim Kelleher of Seneca Balance and Integra Testing Co. presented on Stair Tower Pressurization.

MAEBA would like to thank all the vendors that joined us for "Lunch with the Vendors" and also a special thanks to Dwyer Instruments and Ameritech for sponsoring the bar at the dinner reception!

Hold the Date: MAEBA's Semi-Annual Meeting will be held Friday, April 26, 2024 at the Radisson Hotel in Trevose, PA.

Florida EBB Chapter

Terry Wichlenski

Florida EBB (FEBB) is celebrating 43 years of service with NEBB. Join us at our 2024 Recertification Seminars and Vendor Expo April 25-26, 2024 at the Rosen Shingle Creek Orlando. Come join in the educational sessions as well as a Corn Hole Tournament and/or Golf Tournament. Please contact Terry

Wichlenski, FEBB Chapter Coordinator for additional information or registration at 727-240-4254 or Febbchapter@nebb.org.

We are still offering the TAB Practical Exam when we have at least two candidates for the remainder of 2023, as long as we have an exam site available. Again, please reach out to our chapter coordinator, Terry at 727-240-4254 or Febbchapter@nebb.org.



Rosen Shingle Creek Orlando Resort

Mid-South EBB Chapter

Ginger D. Slaick

MEBB held its Recertification Seminar and Annual Meeting September 23rd-24th in Wilmington, NC. Celebrating 50 years of service, the event was well attended with over 100 CPs, CTs, and owners in attendance. The Vendor Expo was a success, giving attendees the opportunity to network with valued vendors – Instruments Direct, TAB Opts by Ameritech, Ebtron, Retrotec, Building Start, TSI, Evergreen Telemetry, and Dwyer. MEBB greatly appreciates the vendors' continued support of the chapter.

President Scott Goller had the honor and privilege to present the MEBB *Founders Distinguished Service Award*. This prestigious award was established by the MEBB

Board in 2019 and is given in honor of the eight founders of the chapter as special recognition to members who have truly made a distinguished contribution to the chapter and the industry throughout their careers.

MEBB proudly awarded the 2023 *Founders Distinguished Service Award* in honor of Randy Shannon. An adventurer and entrepreneur, Randy founded Research Air Flo in 1977. In 1989, he became one of only twenty NEBB Certified Professionals in the chapter. Randy wasted no time becoming active, locally giving his time and knowledge however needed. In 1991, he was elected to the Board of Directors, and in 1992 he was appointed Technical Committee Chairman. Randy served on the Board of Directors and as the Technical Committee Chairman until his retirement in 2011.

Randy was passionate about the industry, technical training, and was always the go-to person for information on the latest technology. He reviewed thousands of certification and recertification forms, graded countless exams, and reviewed hundreds of recommendation letters during his time as Technical Committee Chairman. Known to be fair-minded and honest, he was committed to each submittal receiving the same detailed, meticulous review as others.

Loved by all who knew him, Randy never met a stranger and always had a story to tell. Most often, those stories would bring his listeners to tears of laughter. Randy was full of life, and generosity, and his sense of humor will forever be a memory to those who knew him. He was an active member of his church and a member of other industry-related organizations. Randy was dedicated and committed to the MEBB chapter. His leadership helped guide the chapter through years of change and growth and it is better today because of his contributions.

Randy's son, Joel Shannon, CEO of Research Air Flo, Vice President and Technical Committee Chairman of MEBB, accepted the award in honor of his dad.



The Birth of Pacific Southwest NEBB

The Merger of Southern California Environmental Balance Bureau (SCEBB) and Northern California/Hawaii NEBB

Erik Dlugajczyk

2020 was a year of uncertainty, nervousness, and political divide, all of which gave me the opportunity to reflect on the status of the Southern California Environmental Balance Bureau (SCEBB). As the newly elected President of SCEBB, the responsibility of overseeing our chapter during that uncertain year became challenging. Not yet knowing if our industry was considered “essential,” the existence of 19 NEBB certified firms lay in the balance, and the status of our association became uncertain. These times of uncertainty gave me the opportunity to reflect on the status of our chapter, what we have done right, what we have done wrong, and what that meant for the future.

As the professional status of our member firms during the 2020 COVID shutdowns became clearer—and that they were in fact considered “essential” by the California state government while the state was mostly shut down, the need for a stronger chapter became more urgent. The need to support our member firms as they maneuvered through COVID, many with explosive growth due to extraordinary increases in hospital work, became clearer, as did the pathway to achieving success. I began to list the problems and potential solutions and began discussions with our Chapter Coordinator Jim Rosier, along with members of our Board of Directors.

First, the problems: It had been over 10 years since member firm dues were increased and SCEBB funding was stagnant, which meant that any programs to be undertaken would be a drain on the finances of our association. In short, we had to come up with substantially more money to implement any programs. Second, due to an increase in work, our member firms needed more CTs, and SCEBB had to find a way to achieve that goal. Third, Southern California was seeing an abundance of specifications requiring AABC only, thereby excluding NEBB firms from a significant market share.

Once the problems were listed, the solutions began surfacing, at least on the discussion table. The funding prob-



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lem needed to be addressed by raising dues, and no one was happy about that. The need for CTs presented an opportunity to put together a two-day refresher seminar, modeled after a similar program already functioning at Capital MarVa, but the chapter had no way of funding this program. The specification problem made it clear

that the chapter was in desperate need of marketing, but that program needed funding as well. All these programs required two things of which SCEBB was in short supply: money and volunteer hours.

After more than a year of attempts, putting together solutions seemed more impossible at every turn. I then had a very interesting conversation with a former co-worker of mine, Amber Kelly, who at that time was the President of NEBB and the former President of the Northern California/Hawaii chapter. We met in Kapalua, Hawaii in 2021 during the Annual Conference, at which time I realized that Northern California NEBB had its own set of problems—some of which were very similar to ours. This opened the opportunity for a conversation about a solution for both chapters: a merger.

Amber and I discussed the problems of our respective chapters, and both realized that a merger was the solution that would resolve many of the issues. The funding problem would be resolved by doubling the member firms, the training problem would be resolved due to an increase in funding and more potential trainers/instructors, and the marketing problem would be resolved due to having not only more funding but also a wider field of volunteers to choose from.

I brought this solution to the SCEBB Board of Directors who unanimously approved my formal inquiry with



the Nor-Cal chapter. I then spoke with the President-Elect of the Nor-Cal Chapter, Sargon Ishaya, who had already discussed the possibility of a merger with Amber Kelly and was already agreeable to further discussions. At this point, both Sargon and I went back to our respective boards and asked them both to approve a bilateral Merger Committee made up of 3 members of SCEBB and 3 members of Nor-Cal/Hawaii NEBB to study the efficacy of a merger of both chapters. Now, this was no longer just a conversation, but a formal and legal process.

The committee met several times on Zoom, and put together a list of pros and cons, which were discussed at length over the next several months. By the end of the conversations, it was hard to find reasons not to merge. The unified chapter would become stronger, more effective, and able to serve the industry, as well as its member firms, in a much more effective capacity. As a result of these talks, several more committees were formed.

The Education Committee was formed to provide training to our members in the form of Continuing Education Credits (CECs), as well as training seminars for prospective Certified Technicians (CTs). Due to the potential increase in geographic size, the Education Committee Chair David Jones also had to consider a virtual aspect to bring education possibilities to those unable to attend seminars in person. After all, making a trip from Hawaii to California takes time and funding.

The Marketing Committee was formed in order to market NEBB to Mechanical Engineers and Architects, targeting those designers who promote "AABC Only" specifications. The intent of the committee is an effort to help change the specs to include NEBB and open a market share for our member firms. While a NEBB-only specification seems appealing, the reality is the committee felt that NEBB has enough positive aspects to set itself apart from AABC without excluding anyone. In other words, if the committee can present NEBB as a viable alternative, it was the committee's feeling that NEBB would win on its own merit. The committee additionally recognized that many of the engineers and architects publishing an "AABC Only" specification had offices within the geographic boundaries of both chap-

ters, which would prove advantageous in the marketing process of a unified chapter covering all of California.

Once the committees resolved to move forward with the merger, the next step was for the committees of both chapters to present the proposal to the boards of both chapters for approval. Both boards were unanimously in favor of this merger.

After this process, it was time to present to the general membership. Several emails went out to the members for discussion, and a virtual meeting was held asking for feedback and ultimately a vote of all the firms of both chapters. This vote also passed almost unanimously.

The next step was to present this to the National NEBB Board of Directors via a motion. NEBB's Executive Vice President Tiffany Meyers was instrumental in assisting the chapter with the correct verbiage, format, and pre-

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sentation of the motion to the NEBB Board of Directors (BOD). Once the NEBB BOD passed the motion, both chapters set a deadline of July 1, 2023 for the merger to take effect.

Jim Rosier who had been the Coordinator for SCEBB for the past 9 years was unanimously chosen to be the Pacific Southwest NEBB Chapter Coordinator. Next, a new name for the chapter needed to be chosen. Several names were proposed such as California/Hawaii/Nevada NEBB and Western States NEBB were floated, but the winner was Pacific Southwest NEBB. A new logo was needed, so Kate Rosier (professional graphic designer and Jim Rosier's daughter) worked on several logos and website designs. Upon presentation to the new Board of Directors, the winning logo was chosen. A few more housekeeping items needed to take place, mostly handled by Jim Rosier (SCEBB/Pacific Southwest Coordinator), Sargon Ishaya (Nor-Cal NEBB President/Pacific Southwest NEBB Board of

Directors) and Robyn Ishaya (Nor-Cal Coordinator). Things such as a name change to the existing 501 (c) 3 organization, a new bank account with the new name, closing of vendors and payables in Northern California, transferring all funds and information to the new chapter, and reaching out to all members updating them on the latest chapter news.

Both committees, boards, and coordinators worked tirelessly for over a year on this project and the successful merger of both chapters is the result of everyone's hard work. The chapter is strong and able to provide its member firms with everything needed for continued success, including obtaining CECs in person and virtually, the ability to market NEBB to design professionals, and the ability to promote NEBB to the entire states of California, Hawaii, and Nevada, and all without raising member dues. The newly formed chapter had the privilege of hosting the 2023 Annual Conference in Monterey, CA and welcomed all chapters to our home. ●



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