



**We deliver sustainable performance
in the built environment**



CLEANROOM CERTIFIED TECHNICIAN TRAINING SEMINAR April 5 - 9, 2010

NEBB, in continuance of its policy to enhance education and training within the cleanroom industry, will offer its intensive training seminar for Cleanroom Certified Performance Testing (CPT) Technicians.

Enrollment will be limited to 24 persons. Available openings will be filled on a “first come - first serve” basis.

Please contact Sheila Simms at 301-977-3698 to confirm that space is available prior to purchasing airline tickets or committing to other expenses.

This seminar is exclusively designed for NEBB Certified Cleanroom Technicians. This course includes an overview of cleanroom performance testing and will be geared to both beginning and intermediate level technicians. The seminar includes both classroom reviews and hands-on training lessons in cleanroom labs.

SEMINAR DATE:

LOCATION:

**April 4, 2010 Sunday (Arrival)
(April 5 - April 8, 2010 Mon-
day/Thursday (Seminar)
April 9, 2010 (Optional Testing)**

**NEBB Training & Educational Center
1525 W. University, Suite 108
Tempe, AZ 85281**

SCHEDULE:

Monday 4/5	8:00 AM	Registration
Monday 4/5	8:00 AM - 6:00 PM	Classroom and Lab Sessions
Tues/Wed 4/6 - 4/7	8:00 AM - 6:00 PM	Classroom and Lab Sessions
Thursday 4/8	8:00 AM - 11:30 AM	Classroom and Lab Sessions
Thursday 4/8	12:30 PM - 6:00 PM	CPT Technicians Exam (Optional)
Friday 4/9	8:00 AM - 5:00 PM	CPT Technicians Exam (Optional)

WHO SHOULD ATTEND:

NEBB Certified Cleanroom Firms and non-NEBB firms are encouraged to have their technicians attend this intensive training seminar.

Those who wish to have their technicians become NEBB Certified Technicians who meet the Requirements of Eligibility as stated in the "NEBB Cleanroom Technician Qualification Program Administration Guide."

This seminar is designed to instruct individuals who have a basic knowledge of cleanrooms and cleanroom testing.

This seminar is for individuals who need to refine certain areas of their cleanroom knowledge before re-taking the NEBB Certified CPT Technician Examinations.

This training seminar is not intended for individuals with very little or no cleanroom testing experience.

Cleanroom Performance Testing (CPT) Technicians also include those persons who are employed by firms that intend to become NEBB certified in cleanroom performance testing. Candidate CPT Technicians must pass several open book written Qualification Examinations and hands on Practical Knowledge Examinations.

INSTRUCTORS:

Proctors will include members of the NEBB Cleanroom Committee:

Donald Hill, P.E. (Accutec Services, Lee's Summit, MO)

Patrick Law (Hepatest, Inc., Longwood, FL)

Dan C. Milholland (Milholland & Associates, Holly Springs, NC)

William (Bill) Neudorfer, P.E. (Neudorfer Engineers, Inc., Seattle, WA)

Randy Silva (ICOM Mechanical, Inc., San Jose, CA)

REQUIREMENTS FOR TECHNICIAN EXAMINATIONS:

The Candidate should have a basic knowledge of cleanrooms and math skills that include:

- Square and square roots, trigonometric functions, percentages and basic algebra
- Particle counters
- Photometers
- Laskin nozzles
- PSL generators
- Air volume and velocity instrumentation

The seminar is intensive and individuals must possess the minimum CPT work-related experience.

The seminar includes an overview of Cleanroom Testing with both classroom and hands-on training.

Candidates will be required to work safely around operating equipment involving electrical equipment.

Candidates, and their company sponsors, will be required to sign a "Hold Harmless" statement indemnifying NEBB, NEBB Employees, Seminar Instructors and the NEBB Training & Educational Center, of any and all losses associated with the seminar attendance of the individual.

THIS SEMINAR IS FOCUSED ON TRAINING FOR THE FOLLOWING SKILLS:

Cleanliness Classification - Correct usage of particle counters to measure particle count levels in all types of cleanrooms and clean environments. Understanding the basic requirements of sample location calculation, sample volume calculation and other pertinent calculations as presented in ISO.

Correct usage of Photometers aerosol generators such as Laskin nozzles and hot oil generators for leak detection of HEPA filters.

Correct usage of Particle Counters and aerosol generators/diluters that use microspheres for leak detection of HEPA/ULPA filters.

Techniques for collecting airflow velocity and volume along with the necessary calculations

Secondary testing including, Airflow Parallelism, Temperature and Humidity Uniformity Tests, Enclosure Pressurization Integrity Tests, Duct Traverses, Room Pressurization.

The first three days of the seminar consist of hands on instruction and classroom instruction. The hands on instruction will be approximately 40% with 60% in the classroom. As an option, on Thursday and Friday, the candidate TECHNICIANS may take Practical and Written Examinations. These exams are required for achieving NEBB-Certified Technician status.

REQUIREMENTS FOR TECHNICIAN EXAMINATIONS:

Participants should bring:

- Calculator and pencils.
- NEBB Procedural Standards for Performance Testing of Cleanrooms
- Industry Testing Standards such as IEST-RP-006.3, IEST-RP-034.2 ISO 14644-1,2, 3

OPTIONAL EQUIPMENT REQUIRED:

Candidates taking the optional hands-on test on Thursday or Friday will be tested using either the Photometer Method or the Particle Counter Method. A Photometer and Particle Counter will be available for your use during the exams, however you may wish to bring your own calibrated Photometer or Particle Counter and Diluter that you are more familiar with so as not to hinder your chances with passing this test.

Prior to the seminar, NEBB will advise candidates of the various models of photometers and particle counters that will be available for their use during testing.

TESTING OVERVIEW:

The NEBB CPT discipline is similar to all of the other NEBB disciplines in that there are written and practical examinations that must be successfully completed in order to attain certification as a technician or as a professional. These written and practical examinations test the knowledge, engineering application and field testing skills required to properly test the performance of today's cleanrooms.

CLEANROOM TECHNICIAN FUNDAMENTALS EXAMINATION:

The NEBB CPT discipline is similar to all of the other NEBB disciplines in that there are written and practical examinations that must be successfully completed in order to attain certification as a technician or as a professional. These written and practical examinations test the knowledge, engineering application and field testing skills required to properly test the performance of today's cleanrooms.

There are five (5) distinct tests that are administered for the program.

This is a series of written examinations that test the candidate's basic knowledge of the Cleanroom applications, the NEBB CPT Procedural Standard, Primary and Secondary Cleanroom Tests and Cleanroom Protocol.

CLEANROOM TECHNICIAN FUNDAMENTALS EXAMINATIONS:

The Cleanroom Fundamentals Examinations are comprised of True/False, Multiple Choice and Work Problems that test the candidate knowledge in the following areas:

Cleanroom basics	HVAC cleanroom design
Cleanroom statistical calculations and reporting	Engineering applications of cleanroom testing
Cleanroom and TAB engineering Principles and applications	Instrumentation and equipment to perform primary and secondary tests

The series of tests include:

General Cleanroom Knowledge Test (1.5 hour)	Photometer Test (1 hour)
Airflow Velocity and Airflow Volume Test (1 hour)	Cleanliness Classification Test (1 hour)
Particle Counter Test (1 hour)	Secondary Cleanroom Tests (1 hour)

CLEANROOM TECHNICIAN PRACTICAL EXAMINATIONS:

This is a hands-on practical exercise where the candidate must display proper application, set-up and use of either a particle counter or photometer and perform filter leak scanning test. The candidate must be thoroughly familiar with the instrumentation operation, calibration, initial set-up routing and use. The candidate will perform a filter leak scan test on a sample test filter and must issue a completed report on the results of that test (1 hour).

- Correct application, knowledge and proper use of the appropriate instrumentation for the test
- Knowledge of the procedural requirements of the test
- Knowledge of the analysis of the measured data and reporting requirements of the test

TESTING SCHEDULE:

All three tests are optional for the seminar attendees and are NOT included in the cost of the Basic seminar. All three tests will be administered at the conclusion of the seminar.

Examinations will be offered to any candidate who wishes to be tested but does not want to attend the seminar. This individualized testing is available to any candidate on the testing dates listed.

Contact the NEBB Office and make the necessary arrangements prior to March 19, 2010 to schedule this testing.

CERTIFICATION REQUIREMENTS:

The NEBB CPT discipline offers certification to firms and individuals, the requirements are available on the NEBB website at www.nebb.org.

REGISTRATION:

Complete attached Registration Form and send with payment to:

Sheila Simms
National Environmental Balancing Bureau
8575 Grovemont Circle
Gaithersburg, MD 20877-4121

REGISTRATION DEADLINE: Friday, March 19, 2010

HOTELS, DIRECTIONS, OR OTHER INFORMATION :

The seminar will start on Monday, April 5 at 8:00 a.m. and will end on Friday, April 9 at 5:00 p.m. NEBB has made arrangements at two local hotels for a special corporate rate: Hyatt Place Tempe Arizona (480-804-9544, close to the seminar site and will shuttle you to the seminar and restaurants) and Courtyard By Marriott Tempe Downtown (480-966-2800 - will provide shuttle to NEBB TEC. Please use these CODES - NEVD - King Weekdays and NEBE - King Weekends). Other hotels are available. Housing and other costs are not covered by the registration fee. **Reservations at the hotel of your choice must be made directly with the hotel. All hotel reservations must be guaranteed by a credit card.**

NEBB CERTIFIED CLEANROOM TECHNICIAN TRAINING SEMINAR REGISTRATION FORM

I WILL ATTEND THE NEBB CERTIFIED CLEANROOM TECHNICIAN TRAINING SEMINAR, April 5-9, 2010 (ARRIVAL April 4th)

NAME: _____ NICKNAME: _____

FIRM: _____

ADDRESS: _____

PHONE: (____) _____ FAX: (____) _____ CHAPTER: _____

EMAIL: _____

ALL HOTEL RESERVATIONS MUST BE MADE DIRECTLY BY THE SEMINAR PARTICIPANT. SEE ANNOUNCEMENT FOR INFORMATION ON LOCAL HOTELS.

FEES:

- \$1,000.00 REGISTRATION FEE (for NEBB Certified Firms)
- \$1,250.00 REGISTRATION FEE (for non-NEBB Firms)
- \$450.00 TECHNICIAN's FUNDAMENTAL EXAMINATIONS
- \$200.00 TECHNICIAN's PRACTICAL EXAMINATION
- \$50.00 NEBB *PROCEDURAL STANDARDS FOR CERTIFIED TESTING OF CLEANROOM*, -
\$100.00 for NON-NEBB Firms (**Hard-Copy**) - (**Can be DOWNLOADED FREE FROM NEBB WEBSITE**)

\$ _____ TOTAL AMOUNT Please call **NEBB** for International Shipping Charges

PAYMENT METHOD:

FORM & CHECK MUST REACH THE NEBB OFFICE NO LATER THAN FRIDAY March 19, 2010. RETURN TO:

Sheila Simms
National Environmental Balancing Bureau
8575 Grovemont Circle
Gaithersburg, Maryland 20877-4121
301-977-3698 Fax 301-977-9589

Check Enclosed made payable to NEBB for Seminar Registration Fee Mastercard VISA

Account Number: _____ Exp. Date: _____

Signature: _____ Total Enclosed (US Dollars) \$ _____

CONDITIONS:

Pre-registration and pre-payment of fees are necessary to ensure your participation in the seminar .

Cancellation by registrants, regardless of reason, will be subject to a \$250 service charge to cover NEBB's expenses. A refund of the prepaid registration and examination fees will be made less the \$250 service charge. All publication sales are final.

No shows or late cancellations (those persons registered for the seminar who do not cancel 30 days prior to the seminar and subsequently do not attend the course) will forfeit the entire registration fee and examination fee unless a replacement can be found.

NEBB reserves the right to cancel any seminars having insufficient registrants, in which case, all prepaid registration and examination fees will be refunded in full.

NEBB cannot be responsible for any losses resulting from cancellation of a seminar. Please advise the NEBB office of any cancellations as-soon-as-possible

FOR NEBB USE - Registration Form Received by NEBB and Reservation Made as Requested Above

.Confirmed by: _____ Date _____

Please advise NEBB and the hotel of any cancellations as-soon-as-possible. All hotel reservations canceled within 72 hours of indicated arrival will be charged one night's full lodging by the hotel.