

EOS/ESD ASSOCIATION TUTORIALS

ESD Auditing Essentials for Successful S20.20 Programs and Beyond!

May 7-9, 2019

Teradyne Conference Center 600 Riverpark Drive, North Reading, MA 01864 USA
Lunch and refreshments provided

May 7, 2019

ESD Myths that Impact ESD Auditing

8:30 a.m. - 12:00 p.m.

Instructor: Ted Dangelmayer, Dangelmayer Associates, LLC.



There are a number of common misunderstandings and controversies about electrostatic discharge (ESD) program management that can have significant impact on the implementation and maintenance of the ESD program. These misunderstandings or “myths” result in unnecessary expenditures and/or result in a compromise of the program integrity. These myths and controversies, such as latency are often cited by skeptics not wanting to adhere to certain standard ESD procedures. As a consequence, it is important to identify and dispel the myths as well as to understand the potential impact of latent failures.

This tutorial highlights 10 common myths and supporting success studies as well as a success study on latency. The myths and success studies presented here were chosen to provide real-world examples of how an ESD program can be strengthened by understanding the fallacy in each of the myths. This understanding will result in more reliable products that are also more cost competitive. Although not a myth, latency is a significant reliability consideration that is surrounded with controversy. Some experts will argue that latency is virtually non-existent and others will claim that it is the dominant failure mode. Reality lies somewhere in between. The Latency study cites irrefutable evidence of latent failures in alarming proportions that must be factored into ESD programs and product design.

Co-sponsored by the Northeast Chapter ESD Association <http://www.nechapter-esda.org>

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May 7, 2019 1:00 p.m. - 4:30 p.m.
(continued) May 8, 2019 8:30 a.m. - 12:00 p.m.
**FC101:How To's of In-Plant ESD Auditing and
Evaluation Measurements**



Instructors: Ted Dangelmayer, Ginger Hansel, Dangelmayer Associates, LLC.

This program reviews the evaluation and periodic verification (audit) measurement procedures for the technical requirements specified in the ANSI/ESD S20.20 ESD program development standard. Detailed explanation of instruments, fixtures, and accessories function and usage are provided. Then, the details of "How to" measure are explained and demonstrated. Measurements include those listed in Table 1: Grounding/Equipotential Bonding Requirements; Table 2: Personnel Grounding Requirements; and Table 3: EPA/ESD Control Items. These recommended measurement procedures confirm the proper operation and use of ESD control products and materials selected as part of a facility's S20.20 ESD control program.

Some sample topics covered in this course are:

- ANSI/ESD S20.20 Technical Control Requirements
- Program Manager's Approach to Instrumentation and Applications
- Testing Ground Circuits and Assessing Connections
- Essential Resistance Measurement Procedures and Concerns
- Electrostatic Field and Voltage Measurements
- Personnel Grounding Considerations vs. ESD Control Points
- Product Installation Baseline Measurements
- Evaluation, Acceptance, and Audit Procedures for: Ground Systems, Floors, Worksurfaces, Equipment, Personnel Grounding, Garments, Materials, Production Aids, Packaging, and Ionization Devices
- Electrostatic Analysis Measurements including Worksurface Suppression, Footwear/Flooring, and Ionization Decay

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May 8th, 2019

Hands-on ESD Measurements & Auditing Pitfalls

1:00 p.m. - 4:30 p.m.

Instructors: Ted Dangelmayer, Ginger Hansel, Dangelmayer Associates, LLC.



Accurate data is the foundation of effective ESD program management. This hands-on tutorial will explain and demonstrate the proper use of ESD test equipment such as static locators, resistance meters, charge plate monitors, and event detectors. We will examine pitfalls of using these common instruments that can result in an incorrect representation of the ESD risk. For example, static locators can give misleading readings if the effects of voltage suppression are not taken into account. We will also discuss the effective use of ionization since ionizers that are not measured, maintained, and located correctly may contribute ESD hazards to the work area. Each student will participate in class exercises to perform these tests. The hands-on experience is the best way to understand the seriousness of the pitfalls and the benefits to taking the proper precautions. What you learn will help you avoid frequent auditing problems and improve your compliance verification program.

May 9th, 2019

FC170: ESD Training for Internal Auditors and Supplier Quality Engineers

8:30 a.m. - 4:30 p.m.

Instructor: John T. Kinnear, IBM Corporation



This class has been designed specifically for those individuals who are responsible for:

- Performing internal company ESD assessments based on ANSI/ESD S20.20
- Conducting a pre-assessment of their facility prior to an external 3rd party assessment
- Assessing the ESD control programs of their suppliers

This course will use the checklist used by ESDA certified auditors as the basis for the class. However, this class will delve into the meaning behind each of the audit checklist questions in greater detail than is currently found in either the ESD Association registrar certification training or the ANSI/ESD S20.20 ESD program design seminar. After taking this class the student will be able assess a process and determine whether or not it meets the requirements of ANSI/ESD S20.20-2007.

Note: Familiarity with performing assessments is recommended for anyone planning on taking this course.

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About the Instructors:



Ted Dangelmayer is the president of Dangelmayer Associates, LLC and has assembled an ESD consulting team consisting of the foremost authorities in virtually all ESD areas of both product design and manufacturing. He received the "Outstanding Contribution" award and the EOS/ESD Association "Founders" award. He was president of the EOS/ESD Association, chairman of the ESDA standards committee, and general chairman of the EOS/ESD Symposium. He has published two editions of his book, ESD Program Management, numerous magazine articles, and technical papers. Ted holds three patents and is iNARTE certified. He is currently president of the Northeast local chapter of the ESD Association and a member of the education committee.



Ginger Hansel joined Motorola's Semiconductor Products Sector in 1981 as a Test Process/Equipment Engineer to analyze and improve manufacturing operations. She founded and led the manufacturing ESD control team that trained, audited, qualified materials, and established innovative solutions throughout the semiconductor sector. Under her leadership, the team reduced a 40% failure rate in one test operation to almost zero through the targeted introduction of specific ESD control materials and ESD Awareness training. Ginger brought ESD awareness to her other roles as Engineering Section Leader, Technical Training Manager, QA Engineer, Business Metrics Engineer, Data and Document Control Manager, Program Manager and Technical Product Marketing Manager. Ginger retired from Motorola/Freescale in 2004 and became Director of Marketing and Program Management with the ESD consulting group, Dangelmayer Associates.

She has published numerous magazine articles and technical papers on effective ESD control programs and awareness training; examples include "The Production Operator: Weak Link or Warrior in the ESD Battle" and "Cost Effective Failure Analysis Method for Detecting Failure Site Associated with Extremely Small Leakage". She has taught seminars, workshops and webinars around the country and abroad. For over 35 years, Ginger has held leadership positions in the EOS/ESD Association such as President, Board of Directors, Chair of the Education Business Unit and has served on the Steering, Technical Program, Standards, and other committees. She is currently the Senior Vice President of the Association and Chair of the Services Business Unit Group.

Ginger initiated the NARTE ESD Certification in 1992 and is a certified ESD Control Engineer. She is currently on the Board of Directors for the Texas ESD Association. Ms. Hansel received a BS in Natural Sciences (Psychology) and a BS in Electrical Engineering Technology, both from the University of Houston. She received her MBA (Executive Option II program) from the University of Texas.

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John Kinnear is an IBM senior engineer specializing in process & system technology, and facility certification in accordance with ANSI/ESD S20.20. He has a BS degree from University of Buffalo and a MS degree from Syracuse University. John is well known globally for his technical contributions to national and international standards. He has been the IBM ESD site coordinator for the Poughkeepsie site since 1989. He is past chairman of the IBM inter-divisional technical liaison committee for ESD protection and is an important member of his company's committee to develop and implement the ESD corporate program for IBM. John has coordinated the testing of large mainframes for compliance to EMC, safety, environmental, shipping, and volatile organic emission standards. He has also been the lead engineer on testing large mainframe systems to EMC emissions and immunity

standards for FCC, CE Mark, VCCI, and other national requirements. As a member of the ESD Association since 1990, John has served in several standards development committees as well as association management positions. John is the appointed technical adviser to the United States National Committee/IEC technical committee 101, where he represents the United States to the International Electrotechnical Commission (IEC). In this position he assisted in the evolution of international ESD standards and supports international adoption of ANSI/ESD S20.20. As chair of the ESDA's facility certification (ANSI/ESD S20.20) development program, John played major roles in the program's development and industry launch. In particular, John coordinated the initial development of lead assessor training, ISO registrar certification, and witness audits. John has served in every ESD Association officer's position, including vice president, senior vice president, and president. He is the past chairman of the EOS/ESD Symposium technical program committee and past general chairman of the 2004 EOS/ESD Symposium. For his contributions to the ESD Association, John was presented with the Outstanding Contribution award in September 2006.

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Register Online at www.esda.org/events/calendar/

First Name: _____ Last Name: _____

Company Name: _____

Street: _____ City: _____

State/Province: _____ Country: _____ Zip/Postal Code: _____

Address is (please circle the one that applies) Home or Company

Phone: _____ E-mail: _____

May 7-8 \$1,420
Register before March 22nd, 2019 member: \$1,020/ non-member \$1,220

May 9 \$710
Register before March 22nd, 2019 member: \$510/ non-member \$610

All three days \$2,130
Register before March 22nd, 2019 member: \$1,530/ non-member \$1,830

Cancellation & refund requests will be honored only if received in writing no later than March, 22nd 2019, and are subject to a \$50 fee. Any other approved dispositions will also be assessed a \$50 fee.

Payment Information:

Register Online at <http://www.cvent.com/d/hbqg3p>

Other forms of payment Contact:

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Accommodations

Residence Inn by Marriott Woburn
300 Presidential Way, Woburn, MA 01801
(781) 376-4000

Courtyard Boston Woburn
240 Mishawum Road, Woburn, MA 01801
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