

TWIN CITIES SECTION 1311

By Harry Spinks, Twin Cities Section Coordinator



The Twin Cities NCSLI Section met on February 21 at the Saint Louis Park Recreation Center in (you guessed it!), St. Louis Park, Minnesota. The event was sponsored by Technical Tools Products (TTP), a new supporter of the local chapter. This was Technical Tools first NCSLI section meeting they have attended, and we appreciate them sponsoring our event. At this daylong event, we had four presentations and three vendors displaying their equipment. The vendors were Atlas Copco, Additel, and Ametek Land Instruments via Control House.

We had 92 attendees, which is just about average for our winter meeting. Typically, the winter meeting has our lowest attendance. The spring meeting is usually our largest with up to 120 attendees.

The meeting began with the introduction of the section steering committee members. This is the team that makes our meetings so successful! Currently, we have 12 members from multiple industries and businesses.

After the introduction, TTP's President John Quinn, and Regional Sales Manager Jake Majerus, provided the sponsor and host Presentation. They are an industry-leading provider of manufacturing solutions. I see John and Jake every week at the assembly plant where I work. They have provided many solutions for us, particularly in torque.

The first presentation was by John Rynertson, of Sturtevant Richmond, on "Torque Wrench and Torque Tester Measurement Uncertainty." John covered the calibration and uncertainty budget for a primary torque standard, torque tester/sensor calibration, and torque wrench calibration. Many of the attendees calibrate torque in one form or another. The presentation was very in-depth and John provided many examples of what to "watch out for" when



Miguel Decos.



Mingjian Zhao.

performing torque calibrations. This is especially helpful to the attendees who calibrate their own torque standards. There's a lot more to torque than most technicians are aware of. Calibrating a torque transducer (cal standard) can be very tricky. There are many variables that can affect your measurement uncertainty that you may not be taking into account. John's presentation was very detailed in that area.

The second presentation was by Dave Mueller, Control House Inc., on "Temperature Measurements with Radiation Thermometry (IR)." The original presenter from Ametek Land was unable to make it to the meeting, so Dave was gracious enough to present the material. He also had equipment there for demonstration. This presentation began with the very basics of IR thermometry and progressed to more detail on



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its application. There were a lot of detailed diagrams and pictures (which is really helpful to calibration technicians). Many of us have seen the IR temperature measurement “guns.” These are very basic compared to an IR “Camera.” One of the more complex factors with IR thermometry is Emissivity. Dave went into a lot of detail on this. Some of the factors which effect emissivity are surface condition, wavelength, viewing angle, and temperature. Accurate IR temperature measurement is not as simple as pointing an IR gun at the source and taking a reading. There’s a lot of science and setup behind accurate IR measurement.

The third presentation was by Mingjian (Jack) Zhao, Additel Corporation, on “Improving Field Pressure Calibration.” Jack’s presentation identified some causes of error with field calibrations and how to improve them. Two huge issues are temperature influences and leakage. Some of the solutions identified are using screw press technology instead of a check valve, an isothermal bellows chamber, and hand-tight quick connectors. The use of a pump with a screw press reduces error when calibrating

hysteresis (down-pressure versus up-pressure). Contamination is also an issue with field pressure calibrations – you never know what the owner was using the gage for! Liquid, moisture and particulate traps are needed to significantly reduce errors and potential harm from contaminants. Hand-tight quick-connectors are also beneficial when in the field. No more tape! Or wrenches! Hooray!

The fourth presentation was by Miguel Decos, On Time Support, on “Technician Qualification through Automated Random Sampling of Completed Work.” Miguel’s presentation provided an example of using a preferred random sampling technique, implemented using capabilities inherent in most databases (i.e. Sybase ASA, Oracle, Microsoft SQL Server, MySQL, etc.), in selecting completed work for continuously monitoring technician competence. Concepts include providing ideas in developing types for classification of equipment (e.g. by discipline, model number family, service location, etc.) and methods for tying the classification directly to the organization’s training program. Additional

information on how to implement these methods, regardless of the database platform used, was also provided. The methods employed in this discussion are applicable in calibration or testing laboratory environments.

Miguel provided very useful information on why some of the other techniques would not be as effective as this one. One of those processes that wasn’t very effective (efficient) was used by the Air Force PMEL’s. It was the multi-level random sampling method. Ah, the fond memories that brought back, shaking a container of coins to see how many turned up heads. If you were very skilled (lucky) you were at Level 4, the ultimate in quality. But, how many of you former PMEL QA Inspectors remember having someone at Level 1? (Was there a level 0?) I thought the procedure was effective at identifying technicians who needed more “training.” Unfortunately, it took one to two full time inspectors (in a Type II) lab to keep up with all the inspections. It’s been a long time (seems like decades, but it’s only been 20 years) since I was in an Air Force PMEL, what are they doing now?

As always, we close out our meeting with the Door Prize Finale!

Our spring 2013 meeting will be in May and is sponsored by Atlas Copco one of our vendors at this meeting. Check the NCSLI website www.ncsli.org, [Regions / Central US / Twin Cities Section] for more information.

Many thanks to our steering committee members who make this a super successful event three times a year!

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