THE INSTITUTE REVIEW

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November 2018

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Registration is Open for the 2019 Forum on Environmental Accreditation

By Jerry Parr, TNI

Registration is open for the 2019 Forum on Environmental Accreditation to be held at the Hyatt Regency in Milwaukee, WI from January 28-31, 2019. The Forum will feature open public meetings of all TNI committees to allow quality professionals, chemists, analysts, microbiologists, engineers, and managers from federal and state agencies; commercial, municipal, state, and federal laboratories; and many others who are actively involved and interested in accreditation issues to review what has been done and to participate in the efforts to establish a national environmental accreditation program. The 2018 Forum will include:

- Meetings of TNI Committees to further TNI efforts on environmental laboratory accreditation, proficiency testing, and accreditation of field sampling and measurement organizations;
- An exhibit program showcasing the latest innovations in environmental monitoring;
- Discussion of the new consensus standards in development for detection and quantitation, instrument calibration, proficiency testing and field activities;
- An Assessment Forum focusing on laboratory requirements for services and supplies;
- A general session with updates about TNI programs;
- An open meeting of US Environmental Protection Agency's Environmental Laboratory Advisory Board; and
- Training courses on radiochemical testing and laboratory management.

You may register now using our on-line registration system.

You may also register by completing the registration form (PDF) on the web site and sending it to:

The NELAC Institute
PO Box 2439
Weatherford, TX 76086
FAX: 817-623-4777
Email: Suzanne.rachmaninoff@nelac-institute.org

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Call for Abstracts for the 35th National Environmental Monitoring Conference

By Earl Hansen, TNI

Organized jointly by the U.S. Environmental Protection Agency (EPA) and The NELAC Institute (TNI), the 2019 Environmental Measurement Symposium is a combined meeting of the National Environmental Monitoring Conference (NEMC) and the Forum on Environmental Accreditation. The meeting will occur August 5-9, 2019 in Jacksonville, FL. It is the largest conference focused on environmental measurements in North America. The theme for the 2019 NEMC meeting will be "Emerging Environmental Issues". The NEMC Steering Committee is inviting abstracts for oral or poster presentations in these topic areas such as:

- Academic Research Topics in Environmental Measurement and Monitoring
- Advances in Monitoring Persistent, Bioaccumulating and Toxic (PBT) Compounds
- Advances in Sample Preparation and Clean-up
- Air Methods, Monitoring and Technology
- Best Practices for Managing Environmental Laboratories
- Challenges and Considerations of Producers of Certified Reference Materials and Proficiency Test Samples with Emerging Contaminants
- Challenges and Opportunities for Solid Phase Extraction
- Changing the Paradigm for Water Pollution Monitoring
- Characterization of Perfluoroalkyl Substances in the Environment
- Citizen Science
- Collaborative Efforts to Improve Environmental Monitoring
- Current Topics in Microbiology
- Data Quality, Management, and Review
- Environmental Laboratory Operations During and After Disaster Events
- Field Sampling, Measurement & Sensor Technology
- Forensic Environmental Chemistry
- Handling Interferences in Complex Matrices for Metals, Nutrients, and COD
- Implementation Issues with the 2017 Method Update Rule
- Laboratory Informatics
- Metals and Metals Speciation Analysis in Environmental Samples
- Monitoring for Contaminants in Foods and Beverage
- New Environmental Monitoring Techniques for Organics
- Old Contaminants with Increased Focus (e.g., lead, mercury)
- Operational and Advocacy Issues Impacting the Environmental Laboratory Industry

Call for Abstracts for the 35th National Environmental Monitoring Conference cont.

- Science and the Aftermath from Natural Disasters
- Science Communication
- Spotlight on Anion Analysis Instrumentation – 9000 series
- Topics in Drinking Water
- Topics in Shale Gas

Please provide your abstract by January 29, 2019. Abstracts received after the deadline are not guaranteed to be reviewed due to the number of available time slots, and the high number of quality and timely submissions received. More information and submission instructions are on the NEMC website at www.nemc.us.

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Nominations for 2019 Board of Directors

By Sharon Mertens, Milwaukee Metropolitan Sewerage District

The election for new Directors will begin soon and nominations for individuals to serve a three-year term on the TNI Board of Directors are now being accepted. TNI members may self-nominate or nominate another individual using the online Nomination Form. There are up to seven (7) open positions for 2019.

TNI is governed by an elected Board, including five (5) officers. Directors are responsible for decisions regarding TNI's goals, objectives, and allocation of resources. By law, Directors are obligated to:

1) act only in the best interests of TNI and to avoid conflicts of interest;
2) act honestly, in good faith, and on an informed basis when making decisions; and
3) pursue the objectives of TNI's mission. TNI holds in high regard Directors who accept these obligations to serve as stewards of the organization.

Having a strong Board of Directors is vital to the strength and future of our organization. Our Board is balanced and has representation from all recognized stakeholder groups.

TNI's Board culture is characterized by full and open participation by all Directors. We believe that this approach maximizes group energy to address major issues facing our profession and organization. We rely upon diverse perspectives to reach well-informed decisions that further our mission. Our Board exercises strategic leadership through its focus on policy, direction, and strategy.

Qualifications for Directors

The Nominating Committee seeks candidates for the TNI Board of Directors who demonstrate strong leadership, commitment, and contributions to the field of environmental laboratory accreditation. We need candidates who have a broad knowledge and awareness of issues facing TNI and are willing to uphold TNI's mission, goals, priorities, and Code of Ethical Conduct.

Directors must demonstrate a commitment to TNI's priority to be a highly functioning organization that is continually enriched by its commitment to balance and inclusion, and must possess strong interpersonal skills with the ability to objectively consider various perspectives to guide major policy decisions.
In addition, Directors need to be able to make the necessary commitment of time and other resources to serve effectively as a Director and to serve as an effective ambassador for TNI and its principles.

Finally, a Director must be a current member of TNI.

These qualifications are designed to ensure that elected Directors are prepared to fulfill their designated responsibilities, including:

- exercising fiduciary responsibilities and stewardship with regard to TNI's goals, policies, and allocation of resources;
- contributing to a policy governance model that provides leadership for TNI with a focus on mission; and
- identifying and cultivating future leaders.

Time Commitments of Board Service

Directors are elected for a term of three (3) years and are renewable. The Board meets by teleconference monthly and in face-to-face meetings as necessary.

Directors receive detailed agenda materials for study prior to each meeting. From time to time Directors may also volunteer or be asked to serve on committees that may conduct business by email, conference call, or additional meetings.

If you are interested in serving on the Board, please complete the TNI Board Nomination Form.

Nominations and Elections Process

Special Note regarding Federal officials: Federal laws prohibit individuals that work for the Federal government from serving on a Board of a non-profit organization in a fiduciary capacity. This law has been interpreted differently by various Federal agencies, but for the sake of consistency, TNI has decided that any Federal official that wishes to serve on the TNI Board can only do so in an Ex-Officio role. Currently, three Ex-Officio Directors, representing the Department of Energy, Department of Defense, and Environmental Protection Agency, serve on the TNI Board. If you are a Federal official and would like to serve on the TNI Board, please contact Sharon Mertens, the chair of the Nominating Committee, at SMertens@mmsd.com.

2017 Election Timeline

November 5 – December 31, 2018:	Nominations accepted
January 1-15, 2019:	Nomination Committee will review the nominations and prepare a slate of candidates
January 14, 2019:	Voting opens with the announcement of the slate of candidates on the TNI website
January 28-31, 2019:	Forum on Laboratory Accreditation, Milwaukee, WI – Candidates Meet and Greet
February 11, 2019:	Voting closes
March 14, 2019:	Newly-elected Directors assume office

Finally, all TNI members have the opportunity and responsibility to vote to select the TNI Board of Directors. The process is through our website and is easy and quick. Our membership is not large so each and ever

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Looking Forward to a Milwaukee Meeting

By Sharon Mertens, Milwaukee Metropolitan Sewerage District

Milwaukee was founded on rich history, natural assets, and a distinctive culture. And we've been building on that foundation ever since. Our buildings are a bit taller and we've innovated and changed with the times. But our character and identity remain preserved, which translates into our own random blend of culture, fun, good food, and entertainment.

Called the "Midwest's coolest (and most underrated) city" by Vogue Magazine, Milwaukee is Wisconsin's largest city and is located along the beautiful shores of Lake Michigan. The Hyatt is part of a three-venue convention campus with three connecting hotels located in the heart of downtown. There are plenty of intriguing off-site venues so you will have a lot of nearby choices including diverse neighborhoods, original breweries, and authentic cuisine.

Meet in Milwaukee

Just blocks from the Hyatt along lively Old World Third Street, you can try an iconic brat-and-a-beer at a German-style pub, buy some great Wisconsin artisanal cheese, or get your team together for "pong action" at a table tennis bar. The Spice House, a favorite of mine and every cook I've ever taken there, is known throughout the culinary world. It's worth entering the store with shelves lined with apothecary-style jars of spices just to smell the delicious aroma! You'll have the spices you want weighed out for you so you can get exactly what you need, and you'll always find something new to try.

Go one block west and you'll find yourself standing in front of the Fiserv Forum, the brand-new home of the Milwaukee Bucks basketball team, which opened just this September. State-of-the art facilities, panoramic views, premium seating, eclectic food and beverage options, and more await visitors. Unfortunately, there are no games scheduled on the dates of the meeting (you could come in early), but there are Cirque du Soleil performances on Wednesday and Thursday.

The hotel is also just a few blocks from other cultural venues including the Performing Arts Center, Pabst Theater, Riverside Theater, and others. There will be opportunities for plays, musical performances, and other evening entertainment.

If you have time, another must-see venue that is equally fun any season is the Harley-Davidson Museum -- the only such museum in the world. Milwaukee's unique history as the home of Harley is embodied in this museum, offering a one-of-a-kind, interactive experience, drawing motorcycle enthusiasts and visitors from all over the world. The Motor Restaurant at the museum is also a great place for lunch or early dinner.

Besides the H-D Museum, Milwaukee has plenty of other museums to suit a wide variety of interests. The best known is our Milwaukee Art Museum. The newest wing of this was designed by Santiago Calatrava and it is well worth the visit just to see this beautifully designed structure that sits at the end of Wisconsin Avenue (the main downtown street) overlooking the Lake Michigan harbor. The white Brise Soleil ("wings" of the building that open and close) form a silhouette that is a symbol of our city.

Brew City

So, what else is brewing in Milwaukee? Funny you should ask. As the city that beer built, brewing happens to be our specialty. The spirit of Milwaukee's first brewers – Miller, Pabst, Schlitz, and Blatz – lives on in local micro-breweries like Good City Brewing, Third Space, Milwaukee Brewing Company, and Lakefront Brewery. Miller-Coors is still a major industry within the city, but the list of smaller breweries keeps growing. We have had over a dozen new micro-breweries pop up within a mile or two of the downtown area just in the past couple of years. Each has its own special character and brews. When you visit the Harley Museum, you're also within a block of the Great Lakes Distillery, which is open for tours, tastings, and lunch.

If you'd like a little food with your beer, you won't find a ton of chain restaurants in Milwaukee. Our burgeoning restaurant scene is dominated by creative and collaborative entrepreneurs – several James Beard-recognized – with their own distinct take on local flavor and cuisine. And our Milwaukee Public Market brings a plethora of local flavors all together under one roof.

How COLD will it get??

The average temperature in January is 30 degrees for the daily high and 14 degrees for the daily low. Having said that, it's not uncommon, especially in recent years, to see stretches of days in the 50s in January. Of course, that doesn't last! We do see snow on the ground in January more often than not that averages 12 inches for January, but there's great variety in that. So, dress for cold and snow, but it's OK to be optimistic and hope for a little warmer weather as well.

The website at visitmilwaukee.org has a lot of great pictures and much more information for you to check out.

I hope to see you soon. You'll be glad you came.

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A Look at Some Cool (and Weird) Winter Sports in Wisconsin

By Sharon Mertens, Milwaukee Metropolitan Sewerage District

When you mention winter sports, most people think of the standards – snow skiing, ice skating, sledding, and many others. Here in Wisconsin we have all of those, but we also have a few other special activities that you may not think about – or have heard of before. Yes – these are ALL COOL! (Pun intended!)

Disclaimer – I have not been an active participant in any of these events. However, I've been a supportive observer of all of these events at one time or another. Friends in their 70s+ routinely spend New Year's morning at *the plunge*, I have cousins who never miss the opening of *sturgeon spearing,* and well-healed acquaintances have spent thousands on their *ice boats*. All to say that these are part of the stream of life here in our state.

First, there is the Polar Bear Plunge.

In Milwaukee, this is an annual event that always takes place on January 1st, no matter how cold the weather. Hundreds to thousands of brave souls converge on Milwaukee's lakefront to take a quick dip in the frigid waters. For some, this is a one-time experience, but others would never miss it, and you will see young and old. Picture rows of people standing by the banks, getting their courage up to run into the water. Some start with "liquid courage" – which could be a hot beverage or beer or both. Some run in and out quickly while others have the fortitude to dunk all the way under and try a quick swim! Most have moral supporters standing on the beach with blankets and towels waiting.

This event is not unique to Milwaukee – many other cities on lakes or rivers that are open at this time of the year hold similar events.

Next comes a sport that has been around the Midwest for over 150 years – iceboating.

Sailing on ice is a special experience because it can only occur as long as the lakes are frozen, but a storm doesn't dump snow on the ice. This occurs most commonly between the 40th and 50th parallels. Ice boating and ice racing can be watched at a number of lakes throughout the state, but Geneva Lake in southeastern Wisconsin is known as the *iceboat capital of North America* because it is a sizeable lake with frequently good ice. And, when the ice is good and the wind is right, racing boats routinely top out at over 100 MPH.

Icefishing has its aficionados, but for a large number of Wisconsinites, nothing beats the annual lake sturgeon season on the Winnebago lake system in central Wisconsin.

Lake sturgeon are a prehistoric, shark-like fish that thrives in these large, shallow lakes. Every February (for the past 80 years), the season opens for spearfishing these giant fish through the ice. The season is closely controlled and only remains open until the quota for the season is met or the scheduled cut-off date arrives, generally 16 days. Only fish that are 36 inches or more can be harvested.

This event isn't just about the fish. Thousands of shanties are set up on the lakes, creating temporary shanty towns. People drive their campers, trucks and other vehicles on the ice to get to their desired spots and safe paths for driving are marked by discarded Christmas trees. For many, it's a tradition of fun and cameraderie that can only be found here.

Finally, for the truly unusual, try winter surfing on Lake Michigan!

Because of its size and depth, waves more than 20 feet high are not uncommon – especially in areas along the central part of the lake. The city of Sheboygan, Wisconsin is one such location. To make things more interesting, the best surfing season comes in the dead of winter. Floating icebergs are a common hazard that surfers learn to watch for. The pictures speak for themselves.

There's plenty more information on the web about these sports and events – both serious and fun. These probably won't be sports that you'll have the chance to participate in while you're here for the conference, but aren't you glad you now know about them?

ChairSpeaks: *"Musings from the TNI Chair"*

By Alfredo Sotomayor

In Praise of Change — II

If change is such a constant in life and so essential for growth, why do we resist it so much? The innate fear of the unknown is partly the reason, but the pace of change itself has a lot to do with it. Sudden change, unless it is winning the Megabucks Lottery, is harder to assimilate than gradual change. Cyclical change is less stressful than random accidents. I have heard that people do not necessarily hate change, but that they abhor being changed. In that notion resides a coping strategy: If we think of change as an external event, and not necessarily as an attempt to make us different, change becomes more manageable.

Change makes us adaptable. Flexibility, a key to professional and personal success, results from embracing change. Extinct species failed to adapt by not evolving and resisting change. We plan so that we can manage, not stop, change. Emergency plans are instituted to bring order to chaos, but excessive reliance on order when chaos has abated disregards the inevitability of change and misdirects energy.

Our environmental analytical community is not known for embracing change easily. I remember how stressful the transitions from NELAC to INELA and from INELA to TNI were. Now that the initial inquietude has subsided, the past fears about those reorganizations are memories that do not look as scary.

Our community is also steeped in what I call the continuity fallacy. Legacy requires us to use old methods to maintain comparability, limit liability, and accommodate those that cannot or will not change. Often, this does not serve us well. At times we need the courage to make harmonious noise, propose change, and go for something new if that explains more, simplifies more, and works better for all. The purpose of standards development should be to provide a range of tolerable options and not to fix very few ones in amber. When we do not understand that, we end up unintentionally erecting roadblocks to beneficial change.

I think of change as equilibrium, as in chemical equilibrium, which is dynamic, never static. At the molecular level, particles change shape, charge, class, and form back and forth, pursuing an eventual state of balance. If I need to quell anxiety about impending change, I remember that my today's bouncing ion will tomorrow be part of a balanced class act. And when I feel uninspired by a temporary lull, I know I can tilt the equilibrium and start springing with excitement once again from one side of the equation to the other. It is elegantly enigmatic that maintaining a "perfect" state requires constant change.

Red Lerille, the owner of a lucrative and enduring health club in Lafayette, Louisiana, attributes his success, in part, to one principle: "make a change every month." I like the rule. It promotes continuous improvement and helps make change familiar and habitual, so that when we encounter unexpected change, it is not as frightful. I make many minor changes and strive to make a least one major change each month. I hope this habit forges alternative paths for my brain cells to facilitate thought and action, but if that does not help, at least I have had a bit of fun along the way. *"You have brains in your head. You have feet in your shoes. You can steer yourself any direction you choose."* So wrote Dr. Seuss.

Only connect…

Alfredo

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The 2016 TNI Laboratory Accreditation Standard and TNI Resources for Implementation

By Jerry Parr, TNI

This document was prepared to provide laboratories information regarding changes to the TNI Standard, which will help them implement the new standard.

TNI's Consensus Standards Development Program has released a new consensus standard for the accreditation of environmental laboratories, Management and Technical Requirements for Laboratories Performing Environmental Analyses, Revision 2.1. Although the standard has been adopted into TNI's National Environmental Laboratory Accreditation Program (NELAP), the NELAP Accreditation Council has not established an implementation date. Each state Accreditation Body (AB) will be setting its own date based on its rule making process. Note that this article only discusses Volume 1 of the Environmental Laboratory sector standards. Volumes 2, 3, and 4, which relate to other aspects of NELAP, were also revised.

1.0 Summary of Changes to Volume 1

This standard consists of seven (7) modules:

Module	Title	Revision	Date
1	Proficiency Testing	2.1	2/3/2017
2	Quality Systems General Requirements	2.1	2/22/2016
3	Quality Systems for Asbestos Testing	2.1	2/15/2015
4	Quality Systems for Chemical Testing	2.2	11/1/2017
5	Quality Systems for Microbiological Testing	2.0	3/15/2016
6	Quality Systems for Radiochemical Testing	2.0	9/28/2015
7	Quality Systems for Toxicity Testing	1.0	3/12/2009

Module 7 was not revised, but is included for completeness. Changes to the other six (6) modules are summarized below.

1.1 Summary of Substantive Changes for Module 1: Proficiency Testing

- Removed all references and requirements related to Experimental Fields of Proficiency Testing.
- The proficiency testing (PT) reporting requirement has been reverted back to Proficiency Testing Reporting Limit (PTRL) reporting. Laboratories are required to evaluate and report results to the PTRL, and the use of the less than (<) sign when the analyte is present in the PT sample will be evaluated as "Not Acceptable."
- The tracking of PT frequency is now based on the closing date, and the required time between the closing date of one PT study and the opening date of a subsequent PT study is now seven (7) days.

- New sections have been added for Radiochemistry, Whole Effluent Toxicity (WET), and Cryptosporidium/Giardia analysis based on input from these committees.

1.2 Summary of Substantive Changes for Module 2: Quality Systems General Requirements

- Added ISO language to Section 1.2 indicating that Notes are guidance and not requirements.
- Added the following new definitions: Analyte, Data Integrity, In-depth Data Monitoring, Lot, Physical Parameter, and Reference Method.
- Revised the definitions for Demonstration of Capability, Limit of Detection, and Selectivity.
- Section 4.1.7 was clarified to indicate the quality manager and the technical manager can be the same person.
- Removed the Note in 4.1.7.1, and added the text in the Note to the beginning of the section.
- Added in Sections 5.4.4 and 5.5.5 from ISO 17025.
- Added in missing subsections from Section 5.4.6 of ISO 17025.
- Clarified that Sections 5.5.1 and 5.5.2 apply to environmental laboratories.
- Added in missing sections 5.6.1 and 5.6.2 from ISO 17025.
- Removed the Note from 5.8.7.3(b) thus making the Note a requirement.
- Added in missing subsections from Section 5.10.4 of ISO 17025.
- Revised Section 5.5.13.1 to clarify the daily check for support equipment.

1.3 Summary of Substantive Changes for Module 3: Quality Systems for Asbestos Testing

- Sections 1.4 and 1.5 on Method Selection and Validation were revised to be consistent with other modules.
- Section 1.6, Demonstration of Capability, was revised for clarity and to allow for more options. The revised section reinforces that this demonstration applies to each individual that performs the test.

1.4 Summary of Substantive Changes for Module 4: Quality Systems for Chemical Testing

- Sections 1.4 and 1.5 on Method Selection and Validation were revised to be consistent with other modules.
- Section 1.5.2 on detection and quantitation limits was significantly revised to be consistent with the EPA MDL procedure in 40 CFR Part 136 and to reflect best professional practice.
- Section 1.6, Demonstration of Capability, was revised for clarity and to allow for more options. The revised section reinforces that this demonstration applies to each individual that performs the test.
- Sections 1.7.1 and 1.7.2 on instrument calibration have been extensively revised, describing various calibration options, discussing how to drop calibration points, and introducing a new quality control measure for evaluating calibration curves.

1.5 Summary of Substantive Changes for Module 6: Quality Systems for Radiochemical Testing

Module 6 was substantially revised by the Radiochemistry Expert Committee. While the substance of the 2009 Standard was overall retained, the text underwent substantial reorganization and reformulation to

add clarity and better address less well-developed concepts. The revised standard now better reflects current practices in environmental radiochemistry laboratories.

Changes in the revised Module 6 include the following:

- Definitions for key terms were added to Section 1.3.
- Requirements for method validation in Section 1.5 were refined to better address laboratory-developed/modified methods and to evaluate uncertainty and method performance at background (zero) activity.
- Section 1.6 requirements for Demonstrations of Capability include analysis of blanks, once again to address method performance at background activity.
- Technical requirements in Section 1.7 were reorganized to logically parallel set-up, calibration, calibration verifications, and quality control of instrumentation.
- Section 1.7.1 provides requirements for mathematical calibration methods, and for several approaches to background determination, both of which are in common use but neither of which are currently permitted.
- The most substantial change to method quality controls in Section 1.7.2, the Radiation Measurements Batch, was introduced to eliminate substantial confusion, and inconsistent implementation of batch quality controls for non-destructive analyses such as gamma spectrometry.
- Section 1.7.3 contains requirements for evaluating chemical yield which were not included in previous revisions. It also addresses reporting requirements for uncertainty.

Note: This module was not addressed in the 2016 Standard webinars that are planned for the fall of 2018 as a recording of an earlier webinar is available.

2.0 Implementation Resources Available from TNI

To support the implementation of the 2016 Standard, TNI has developed or is currently developing a number of tools and other resources to help both the laboratories and the organizations that accredit laboratories.

2.1 Revised Small Laboratory Handbook

This document is intended to help explain the requirements of TNI's 2016 Standard (EL-V1-2016-rev 2.1: Management and Technical Requirements for Laboratories Performing Environmental Analysis) and to provide environmental laboratories, especially small laboratories, with clear, simple guidance on how to develop the policies and procedures that will allow them to become accredited to the TNI Standard. This handbook is NOT a substitute for reading and understanding the TNI Standard. The revised handbook includes much more "How To" information and the guidance documents on LOD/LOQ and calibration described in 2.4. below. The revised handbook also contains a discussion of the accreditation process and several appendices with useful information, including a list of acronyms, common findings, SOP templates, and answers to standard interpretation requests. You can find the "How To" document here.

2.2 Revised Quality Manual Template

The new TNI Quality Manual Template is a tool designed for laboratories to help prepare a Quality Manual in compliance with the 2016 TNI Standard. The prefabricated sections of the Quality Manual Template follow the ISO/IEC 17025 outline, but are completely fluid so that you can put sections, examples, links, or references anywhere. The template includes helpful notes, examples and text that can be edited to match each laboratory's particular circumstances. It can be used by a laboratory to create a Quality Manual from scratch or ideas and sections can be used to update a current Quality Manual. The primary change in this revised template was combining the multiple files into one file to make the template easier to edit and replacing the references to the 2009 Standard with the 2016 Standard. Since both the 2009 and 2016 Standards have the same structure and very comparable content, anyone who purchased the 2009 version, or who has an existing Quality Manual, does not need to obtain the 2016 version. You can find the revised Quality Manual Template here.

2.3 Checklists

TNI has published a checklist to allow laboratories to do an internal gap analysis for the TNI 2016 Standard. This checklist may be downloaded online if you own a copy of the TNI Standard. This analysis will help laboratories to see where they might need to add policies, procedures, or other documentation. You can find this Checklist here.

2.4 New Guidance Documents

TNI is in the process of finalizing three guidance documents on these specific topics:

- Proficiency Testing Reporting Limit (PTRL)
- Detection and Quantitation
- Instrument Calibration

These documents are at the final draft stage and should be published by November.

2.5 Standard Interpretation Requests (SIRs)

TNI has established an avenue for resolution of questions submitted electronically on interpretation of the Standards. Answers to the requests are currently organized by standard: 2003, 2009, or 2016. Some are now obsolete, while some of 2003 and 2009 SIRs are applicable to 2016. Expert Committees are reviewing the status of all SIRs to map them to 2016, where applicable. This effort is expected to be complete by January 2019. You can find information on NELAP and TNI Standards Interpretations here.

2.6 Comparison and Advocacy Documents

TNI has published an article that compares in detail the changes from the 2003 NELAC Standard to the 2009 TNI Standard, and the 2009 Standard to the 2016 Standard. You can find the article here.

2.7 Early Adoption

Many of the changes in the 2016 Standard could be implemented now. For example, the new LOD/LOQ requirements in Module 4 could be implemented now as these requirements are more specific than what is in the 2009 Standard. However, some of the new requirements may have to wait until the Standard is effective in your state. For example, the PTRL reporting in Module 1 will have to wait until each AB adopts the Standard into their rules. Another example is the single point calibration for support equipment (e.g., ovens, water baths) in Module 2. TNI held a special session on this topic in August 2018, and the notes from that session should be posted on the TNI website later this year. However, TNI recommends you talk to your AB about any of the changes you would like to implement now.

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Looking Ahead to the 2016 TNI Standard – What Can I Implement Now?

By Judy Morgan, Pace Analytical Services; Silky Labie, ELCAT; Ilona Taunton, TNI

The NELAP Accreditation Council (AC) has approved The NELAC Institute's 2016 Environmental Laboratory Standard for use by the state Accreditation Bodies (ABs), and some states have begun adopting the Standard into their rules. (See the companion article in this issue of the newsletter, NELAP Implementation of the 2016 TNI Environmental Laboratory Sector Standard, for more information on this topic.) While a majority of the changes in the Standard are clarifications based on legacy Standard Interpretation Requests (SIRs) and rewording or reorganizing paragraphs for better understanding, the Chemistry Module (Volume1, Module 4 (V1M4)) introduced two (2) significant revisions: A procedure to determine the method detection limit and more detailed requirements for calibrating instruments.

Many laboratories have been asking the question "What can I begin to implement now, before my AB formally requires its use?"

At the 2018 Summer Meeting in New Orleans, the Assessment Forum topic was "Early Implementation of the 2016 TNI Standard" and included:

- A summary of the revisions;
- Detailed presentations on new requirements from the Chemistry Module for determining method detection limits and performing instrument calibrations; and
- Items that could not be implemented until formal adoption of the 2016 Standard.

Surprisingly, the speakers identified only two changes that could not be implemented:

- Proficiency Testing Reporting Limit (PTRL) scoring (unless your AB never adopted the 2009 Standard); and
- A single-point temperature verification for narrow range-of-use thermometers.

Outside of the new requirements in the Chemistry Module, several clarifications were also added throughout the Standard. A few of the more notable ones are listed below:

- **Demonstration of Capability (DOC)** – Ambiguous language for DOC was removed and the language was strengthened across all relevant modules. It specifically states that if more than twelve (12) months have passed since an analyst has performed a method, then a new DOC must be performed.
- **V1M2 Section 5.8.5** – Now specifies that actual "sample containers" need unique identification, not just samples.
- **V1M2 5.5.13.1 e)** – Clarifies verifications of volumetric measuring devices.
- Throughout the Standard, several "Notes" were removed, but some previously omitted ISO language was added. Ideally, these changes removed ambiguity and aligned the Standard with the complete language included in ISO 17025 2005.

Looking Ahead to the 2016 TNI Standard – What Can I Implement Now? cont.

Aside from some basic clarifications, a few additions, and a few deletions, the Standard is not significantly different than its predecessor. It is a refined improvement that addresses previous SIRs and will be accompanied by three (3) well written guidance documents that are designed to assist the laboratories in successful implementation of the new requirements for PTRL, Detection and Quantitation, and Calibration.

Q & A for the new V1M4 requirements:

1. Q: Since the Method Detection Limit procedure is new to the standard, can I implement it now?
   A: (1) EPA promulgated an MDL procedure that mirrors the one in the TNI Standard in its most recent Method Update Rule (MUR). The effective date of the MUR was September 12, 2017. Laboratories that are required to use the EPA procedure are already using the procedure.
   (2) The 2009 TNI Standard allows use of any technically appropriate method to determine the MDL. Therefore, the one specified in the 2016 Standard can be used immediately.

2. Q: The calibration requirements outlined in the standard are new – can I implement the changes now?
   A: The requirements in the Standard are not new. Many of them are already included in methods. The 2009 Standard does not specify procedures to be used, so requirements such as % error or % relative error can be incorporated into the laboratory's calibration assessment procedure. In addition, the new requirements are more stringent than those in the previous version of the Standard, therefore allowing for early implementation, if so desired.

NELAP Implementation of the 2016 TNI Environmental Laboratory Sector Standard

By Lynn Bradley, NELAP Program Administrator

In June of 2018, the NELAP Accreditation Council voted to adopt the 2016 TNI Environmental Laboratory Sector Standard, Volumes 1 and 2 ("the 2016 NELAP Standard"). (Volumes 3 and 4 were adopted earlier by the PT Program Executive Committee.) The Council determined that it will not set an implementation date for the 2016 NELAP Standard until it can approve the guidance documents requested from TNI's Chemistry Expert Committee for calibration processes and for detection and quantitation processes, both of which are new in the 2016 revision. As you read this article, drafts of those guidance documents have been reviewed and comments returned to the Chemistry Committee, but no dates are set for completion of the revision or the Council's review and acceptance of them.

Once the guidance is approved, an implementation date will be quickly selected. However, the process for implementation of the 2016 TNI Standard is unique for each state's accreditation body (AB). There are several states that adopt the standard by reference and others that need to write or update specific state regulations. Due to this complexity, please contact your state/accreditation body directly for its implementation timelines and requirements. The most important fact to remember is that, regardless of which standard a NELAP AB is using, all NELAP ABs will recognize other NELAP accreditations for secondary accreditations.

We do know that Florida's rule was promulgated September 26th, 2018, adopting the 2016 NELAP Standard. Florida is allowing a six (6) month "grace period" until April 1, 2019. During that time, non-conformances will not be considered deficiencies ("findings"), but will be written into assessment reports. Florida has already communicated this information to all of its primary accredited laboratories, and labs having secondary accreditation in Florida are not affected.

You may also have heard that Kansas is in the midst of rulemaking, and that other NELAP states are initiating rulemaking. Please understand that rulemaking is a lengthy process, and we do not expect that any other NELAP states besides Florida will implement the 2016 NELAP Standard prior to the date that the Accreditation Council establishes. If you are a NELAP-accredited lab, your AB will keep you informed of its progress towards implementation, but as noted above, you can always contact your AB directly.

5 Elements of a Good Standard

By Jerry Parr, TNI

1. **Flexible.** Allow laboratories freedom to use their experience and expertise in performing their work and allow for new and novel approaches. Specify the "What" and avoid, where possible, the "How To."
2. **Auditable.** Sufficient detail included so that the assessors can evaluate laboratories consistently.
3. **Practical and Essential.** Necessary policies and procedures that should not place an unreasonable burden upon laboratories.
4. **Widely Applicable.** Applicable to laboratories regardless of size and complexity.
5. **Appropriate.** Ensure that data is of known quality and that the quality is adequate for the intended use.

ISO 17025:2017... What's New for TNI?

By Paul Junio, North Lake Service

TNI hosted a session on the transition to ISO 17025:2017 at the Environmental Measurement Symposium in New Orleans on August 8, 2018. The session included presentations from representatives of Non-Governmental Accreditation Bodies (NGABs), TNI's Quality Systems Committee, and TNI's Field Activities Committee. These presentations were directed toward a panel of experts as well as the audience in attendance. The hope for the session was to gather as many interested parties in one place so that we could share our visions for the direction we will take with changes brought on by the revision to ISO 17025, as well as avoiding any pitfalls by not considering all of the options available to us as an organization.

Chris Gunning (A2LA), Paul Junio (TNI Quality Systems), and Shannon Swantek (TNI Field Activities) each gave brief presentations to provide some background to everyone in attendance, as well as to frame the questions that the organization needs to address. From the perspective of A2LA, a laboratory will need to perform some additional tasks to comply with the new version of ISO 17025, as well as continuing to do what it had previously done. From the perspective of dealing with "risk", it is important to keep in mind that one cannot choose to disregard a requirement in the name of mitigating risk. The Quality Systems Committee sought feedback regarding how the transition would occur (i.e., in one step or in phases), and what should be done about outstanding Standards Interpretation Requests (SIRs) and previous discussions regarding Technical Manager requirements. The Field Activities Committee expressed concern about whether Field Sampling would be included in the Quality Systems Module, since it is addressed to a greater degree than it had been in the past. Along those same lines, there is a question about whether and how Field Sampling accreditation might become a requirement as opposed to the voluntary situation that it is currently.

From the panelists and audience members, it was noted that the Department of Defense (DoD) will be creating a revised version of their Quality Systems Manual, beginning with a stepwise update inserting new requirements into the existing version. A complete re-write will occur, but this update is needed sooner than the complete re-write could be ready. Laboratories and Accreditation Bodies (ABs) both are concerned about how risk management and risk assessment can and will be addressed. These concepts are different terms from what we have historically followed, and it will take time to become proficient in their use and review. This shift to risk assessment is likely where TNI's effort needs to focus, so that the entire organization is ready to adapt to the change.

The Field Activities Committee will continue on its path of re-writing its Standard, as will the Quality Systems Committee. Their timeframes need not be the same, as Field Activities is in the normal stage of a 5-year review, while Quality Systems is only beginning the process. Please contact the Chairs of those committees (Shannon Swantek or Paul Junio, respectively) should you like to be more involved in the process.

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Update on Training

By Ilona Taunton, TNI

A number of new on-line training courses are now open for registration or are in development and should be announced soon.

Good Laboratory Practice – Internal Audits

Instructor: Matt Sica, ANAB
https://nelac-institute.org/content/load_eds.php?id=145

The course is self-paced and is being offered through a partnering with ANSI-ASQ National Accreditation Board (ANAB). After an attendee registers for the course, they will receive an email to set-up access to the course and course materials for a specified time frame.

The goal of the course is to provide a practical approach for internal auditing to the TNI Environmental Laboratory Standard and will cover the following topics:

- Why should you do an internal audit?
- Standard requirements for an internal audit
- Practical approaches to internal auditing
- ISO 19011 Guidance
- Preparation
- Audit Team
- Reporting
- General discussion on how to audit management system
- How to write, respond, resolve nonconformities
- Common lab findings from internal audits
- Assessment expectations for internal audits of the management system
- Case studies

Microbiology Assessor Training

Instructor: Marlene Moore, Advanced Systems
https://nelac-institute.org/content/load_eds.php?id=144

This 16-hour webinar to be held from December 3-6, 2018 provides examples of the assessment process for microbiology, based on TNI 2009 and 2016 standards. The principles for assessing specific technical disciplines within the laboratory operations are presented.

This course provides, identifies and reviews the following:

- Critical steps and processes of the analytical technology or technique that must be executed to ensure quality data, including critical quality control (QC) measures and QC criteria.
- Major sources of error for the analytical technology or technique and how to evaluate them as part of the assessment.
- Inappropriate procedures or practices for the analytical technology or technique.
- Key information required for assessing the laboratory results and procedures
- Essential elements for assessing data generated.
- Exercises in the assessment from raw data to reported results.
- Writing findings or non-conformances to the standard requirements and recording observations.

Assessor Refresher Training – 2016 TNI Environmental Laboratory Standard

Instructor: Marlene Moore, Advanced Systems
https://nelac-institute.org/content/load_eds.php?id=148

The course is conducted as a webinar for two sessions on February 11 and February 15, 2019 – three hours each for a total of six hours. The objectives are to review the 2016 TNI Standard, provide updates on the interpretations of the TNI Standards, present recent Inspector General activity, review accreditation body procedures, and review assessment practices with a focus on the chemistry and microbiology modules. Course content is based on the 2016 Environmental Laboratory Standard and presents techniques for conducting a process assessment.

Course Outline

Day 1

- Introduction
- Changes to Modules and the Assessment
- Assessment changes – Module 1
- Evaluating Laboratory Process
- Assessment changes – Module 2

Day 2

- Evaluation Laboratory Process
- Assessment changes - Module 5 Microbiology
- Assessment changes – Module 4 Chemistry
- Assessment changes – Module 4 Chemistry

Managing an Environmental Laboratory

Instructor: Marlene Moore, Advanced Systems
https://iattend.net/EventHome?id=labmgt19

The 5-part course presents several aspects of managing an environmental laboratory that generates data of known and documented quality. The course will be held at TNI's Forum on Environmental Accreditation on January 31, 2019 and then as a series of 5 webinars in February and March 2019. Most Laboratory Managers, Technical Directors and Quality Assurance (QA) Managers have learned by doing the job. The science of doing the tests is only part of the process of doing environmental science. Every environmental laboratory manager must learn all aspects of data generation, which includes not only understanding the science, but must also understanding the regulations. This course is designed for environmental laboratory managers, owners, Technical Managers and QA managers.

Part 1: Managing a laboratory

Many laboratory managers have had many years of training learning science. The same laboratory managers have had little to no training on how to manage a laboratory. There are basically several types of management: Reactive, Consultative, Autocratic plus other Styles. This part of the series presents several styles along with processes that may be used by managers to encourage team building and input on scientific matters. The series emphasizes how to lead personnel to perform regulatory science.

Part 2: Hiring and training competent personnel

Hiring personnel with a basic science education is the first step in obtaining competent personnel. Other elements are required to evaluate the competency of the laboratory staff. The second part of this series will present ways to develop and assure that staff is competent to perform the job(s) assigned. Each person must demonstrate competency for doing the test as well as receiving samples, reviewing reports and reviewing the quality of the data.

Part 3: Selecting methods and preparing SOP

The manager must have a process for selecting the correct method for the regulatory application. The manager of the laboratory must have a process for method selection and developing a Standard Operating Procedure (SOP) based on the regulatory method. Some regulations require the reference method to be followed exactly and others allow the laboratory to deviate from the reference. The third part of the series presents the process of method selection and writing/reviewing SOPs.

Part 4: Buying services and equipment

The manager must select the proper equipment, supplies, and services to ensure data of known and documented quality. The process to select vendors of services and equipment must be defined. The vendors must be evaluated prior to the purchase and after the purchase. This part of the series includes managing: purchasing, receiving, installation or inventory control, maintenance, and upgrading of equipment.

Part 5: Monitoring the quality of your data

The manager must have a process to monitor of quality of all data generated by the laboratory. The laboratory staff must have the records to allow historical reconstruction of the results and calibration data. In some laboratories, the manager reviews all the data and signs the report. In other labs the manager signs the report but does not review the data. Laboratory managers use a variety of techniques to ensure the data is of known and documented quality. The laboratory manager sometimes referred to the technical director is responsible for all data generated, no matter if the director reviews the data or does not review the data. Evaluating the quality of the data is another process that must be managed.

Understanding Radiochemistry Testing and the TNI 2016 Standard –ASTM D7283 and EPA 906.0 (Liquid Scintillation Counting)

Instructor: TNI Radiochemistry Expert Committee
https://nelac-institute.org/content/load_eds.php?id=142

This 8-hour course was presented at the 2018 Environmental Measurement Symposium and a recording is available. Using ASTM Method D7283, *ASTM Standard Test Method for Alpha and Beta Activity in Water By Liquid Scintillation Counting*, and EPA Method 906.0, *Tritium in Drinking Water* as examples, this course will provide participants with a general understanding of the theory behind the radioanalytical techniques used, and applicable requirements of TNI 2016 Standard Volume 1 Module 6. A mixture of theory-lecture and interactive exercises using real laboratory data examples will help participants see how analytical processes translate into actions, results, and records that one might encounter in a typical radioanalytical laboratory. It will also address typical challenges that may be encountered. This class will be of benefit both to radiochemistry laboratorians and radiochemistry assessors. Topics addressed will include:

- Method scope, application, and limitations
- Radioactive decay;
- Radiochemical preparation;
- Sample test source preparation;
- Liquid scintillation counter (LSC) set-up, performance checks, efficiency and cross-talk calibrations, and background determinations;
- Calculation and reporting of results and associated statistics (i.e., counting uncertainty vs. combined uncertainty, critical level vs. minimum detectable concentration vs. SDWA Detection Limit, chemical yield);
- Common problems and challenges encountered with these methods;
- TNI Standard Volume 1, Module 6 requirements as they relate to the two methods.

Sample Collection (to be held in early 2019)

Instructors: John and Silky Labie, Environmental Laboratory Consulting and Technology

The 8-hour webinar will emphasize the importance of collecting samples that represent the source matrix and maintaining the integrity of the sample until delivery to the laboratory. Also implicit in these objectives are understanding the objectives/reasons for collecting the samples and ensuring that the selected site (or sites) accurately represent the goals of the sampling project.

The goal is to provide practical guidance and performance measures for field operations to consider when collecting samples.

Completion of the course will provide the attendees with an understanding of the importance of maintaining sample integrity and traceability as the sample is handled in the field and in the laboratory.

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Assessing Labs When State Regulations Are Poorly Written

By Mitzi Miller NV5/Dade Moeller

When the regulations are generic and do not provide any detail as to what the regulation requires, the question becomes "What do we audit to?" The information that satisfies one person may be insufficient for another reviewer or data user. One such case in point is California Code of Regulations § 64815, which lists topics to be covered in a quality manual. Examples of two (2) items listed without enough detail in the requirement relate to corrective action and performance/system audits. If the assessor sees a reoccurring issue that is generally noted as a "repeat finding," but the laboratory documented that an action was taken, the assessor cannot write a systematic finding stating that a root cause analysis was not performed. This is because there is no requirement to perform root cause analysis in the regulation. If a laboratory claims that analyzing proficiency test samples once per year suffices for performance/system audits, the assessor has little ground to stand on because the regulation does not define a system.

Results of having insufficient regulations include:

- Less consistency in auditing because the target regulation is open for interpretation by the assigned assessor;
- Increased difficulty in assessor training because of the variability in test method and regulatory interpretation;
- Reoccurring issues, findings and problems because a systematic approach to addressing issues is not applied. The lab fixes the single point finding without addressing other areas where a similar issue may occur. Additionally, there are no quality systems to ensure internal audits cover all areas of the laboratory and no requirement to follow-up on any corrective actions taken to ensure the efficacy of the action; and
- Auditing into compliance. Laboratories do not proactively learn, establish and implement criteria. Instead, they want the regulators to arrive and tell them how to comply with methods and ever changing regulations. This approach means that laboratories do not read their methods and try to follow them, but wait until their next audit cycle to make adjustments.

In order to effectively audit when state regulations are vague, the following can be done:

- Generate lists of "regulation interpretations" as guidance for the laboratories and assessors;
- Perform method audits in detail since systems requirements do not exist in the regulation. Technology-based auditing is not effective for a laboratory without a quality system;
- Provide extensive training to assessors so that they function as a team. Have routine meetings with all assessors in the group to ensure assessor interpretations are consistent; and
- Have a detailed review of all findings by one or two staff to look for and manage inconsistencies.

Assessing Labs When State Regulations Are Poorly Written cont.

When regulations have few “shalls”, the assessor cannot identify the true requirement and write a finding even when it would be logical to do so. This scarcity of requirements means that critical findings may not be written when they need to be. The alternative is writing many observations, which the laboratory is not required to correct.

Another result of having poorly written regulations that lack a systems approach is that assessors write many more findings for the same issue reoccurring in different methods. When regulations are insufficient and audits are not consistently performed, the number of findings per laboratory increases. For example, in California, the statistics show that for 68 audits, 28 (41%) of the laboratories have 20-70 findings.

Some organizations think that the lack of specificity in the regulations allows for easier compliance. This may be true, but at what cost? Ease of compliance should not be the standard for regulating drinking water, a vital commodity that is used by all citizens and visitors of the state. While some laboratories appear to embrace the decreased specificity, the majority of those who want to provide high quality data want greater specificity. These laboratories want to learn how to implement systems so that they can improve quality and efficiency.

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Florida's Partnership with 3rd-Party Assessors Works

By Vanessa Soto-Contreras, Florida Department of Health

Back in 1979, Florida established the Environmental Laboratory Certification Program (ELCP) following the implementation of the Safe Drinking Water Act in 1974. During that time, our program was in what I will call the Stone Age. By 1995, the ELCP had a staff of sixteen (16), including nine (9) assessors, and certified 396 laboratories. Our Renaissance began in 1999 when Florida became a NELAC Accrediting Authority -- a transition from medieval to modern times. Assessments were not method-based anymore since by that time, we had started using checklists that included the detailed and comprehensive NELAC standards. The assessments started taking more time, and by 2009, our list of laboratories overdue for biennial assessments started to grow.

In 2011, laws of Florida were reviewed, and in 2012, the suggestions of outsourcing the inspections became a reality when House Bill 1263 passed and mandated contracting. In 2013, the ELCP had a staff of eleven (11) (assessors, In-house professionals, and a clerk). The size of the group continued to decrease as staff members were not replaced when they retired or left to find job security. The ELCP started using 3rd party assessors' contracts, beginning The Age of Enlightenment, the Partnership.

Currently, the Florida ELCP has six (6) employees, nine (9) approved assessment providers, and 354 certified laboratories. The ELCP-Provider partnership has worked for Florida. There are three (3) key elements that have made this partnership work. The first one is the most important filter, the Request for Application (RFA). RFAs are evaluated by ELCP staff, and contracts are awarded to applicants that meet set criteria based on a point system. Applicants that have been awarded with contracts know what we expect from them and what we will deliver.

The second key element is the Contract. The Contract is the agreement that includes details of what ELCP expects from the providers before, during, and after the assessments. The Contract includes a task list that requires assessors to update technology capability tables, determine needs to conduct the assessments, inform the ELCP of schedules, permit ELCP staff to observe any assessments, conduct assessments in compliance with FAC Chapter 64E-1, issue assessment reports, review Plans of Corrections, and submit recommendations to the ELCP.

The third key element is simple, yet so important: Communication. The ELCP sends previous assessment and Proficiency Test reports to the providers, reviews assessment reports, performs contract oversight, and informs providers of situations or issues related to scheduled laboratories. Keeping the providers informed of what is happening with our program and the laboratories, any changes we might have, and decisions that have been made, is crucial.

By having 3rd parties assess the laboratories, the ELCP has had more time to assist the clients, more availability to perform administrative duties at the office, more time to review data packages, and more time to conduct follow-up and surveillance assessments. The laboratories have flexibility to select the provider that best meets

their needs, and they have the freedom to choose the assessment schedules. The competition among providers decreases prices and offers high quality of service, and having multiple providers equals more availability for assessments. After five (5) years outsourcing to providers, laboratories are responsive and have adjusted well to the contract process. Contracting providers was a successful solution for the State of Florida; they are our eyes and ears in the laboratories.

Success and trust in the quality of service delivered by 3rd party assessment providers starts with a comprehensive selection process. Constant communication and mutual understanding make the partnership work.

Report from New Orleans, LA

By Lara Phelps, USEPA and Jerry Parr, TNI

The Environmental Measurement Symposium, which represents the combined meetings of the National Environmental Monitoring Conference (NEMC) and the Forum on Environmental Accreditation (the Forum), took place in New Orleans, LA this summer from August 6 – 10, 2018. This was the 12th combined meeting of the Forum and the NEMC, and it has only continued to grow.

Around 600 attendees participated in a week full of engaging technical presentations, thoughtful committee meetings of The NELAC Institute (TNI), special workshops, and technology innovation displays, among many other opportunities. The technical presentations from the NEMC meeting can be found on the NEMC website. Minutes from TNI committee meetings and presentations from the Forum can be found here.

Recipe:

White Lightning Chicken Chili

By Lara Phelps, USEPA

From my kitchen to yours, I hope you enjoy this dish over the cooler nights of the fall/winter and even during the holidays. You can easily substitute some of your leftover turkey, rotisserie chicken, or other white meat in place of the Roast Chicken & Garlic, which is a bonus recipe below.

Ingredients:

- 3 cups Roast Chicken & Garlic (recipe below), shredded
- 6 roasted garlic cloves (can be used from recipe below)
- 1 cup onion, chopped
- 1/3 cup fresh jalapeno peppers, seeded and chopped
- 3 cans (15 oz. each) Great Northern beans, drained, rinsed, and divided
- 2 teaspoons vegetable oil
- 3 TBSP Southwestern Seasoning Mix (any variety/brand will do)
- ¼ cup lime juice
- 1 TBSP cornstarch
- 1 TBSP cold water
- ¼ cup fresh cilantro, snipped (optional)

Directions:

1. Chop onion and jalapeno peppers.
2. Drain 1 can of beans and put into a bowl. Squeeze garlic from papery skins into beans and mash together. Drain remaining 2 cans of beans and set them aside.
3. Heat oil in Dutch oven over medium heat. Add onion and jalapeno peppers; cook 4 – 5 minutes or until onion is tender. Add chicken, mashed bean-garlic mixture, whole beans, chicken broth, Seasoning Mix, and lime juice. Bring to a boil; reduce heat and simmer 25 minutes. (OPTION – You can cook the onions and jalapeno peppers until onion is tender and then place these ingredients into a crockpot. You will want to start on the highest setting, but then reduce once it comes to a boil.)
4. Combine cornstarch and water, stirring until smooth. Add cornstarch mixture to chili and continue cooking 5 minutes, stirring constantly.
5. Snip cilantro. Recommend serving as a chili bar with options to top off your bowl of chili with cilantro, avocado, sour cream, Monterey jack cheese, and/or pickled (or fresh) jalapeno peppers.

Keep reading… the bonus Roasted Chicken and Garlic recipe is on the next page...

Bonus Recipe:

Roasted Chicken and Garlic

By Lara Phelps, USEPA

Ingredients:

1 roasting chicken (5 ½ - 6 ½ pounds)
2 whole heads garlic, unpeeled
1 small bunch fresh parsley, divided
½ tsp salt
¼ tsp coarsely ground black pepper
¼ tsp paprika
1 medium carrot
1 stalk celery

Directions:

1. Preheat oven to 400°F. Remove and discard giblets and neck from chicken. Rinse chicken with cold water; pat dry with paper towels. Trim any excess fat from chicken.
2. Slice off top quarter of each garlic head to expose garlic cloves. Separate cloves and discard loose papery skin, but do not peel cloves. Place 10 cloves in cavity of chicken. Snip enough parsley to equal 1 TBSP; set aside. Place remaining parsley in cavity of chicken. Tie end of legs together using cotton string. Rub outside of chicken with salt, black pepper, and paprika.
3. Coarsely chop carrot and celery. Place in 9”x13” pan and rest chicken on top of the vegetables. Lift wing tips up towards neck then tuck under back. Sprinkle remaining garlic cloves around chicken. Cover in a baker or with aluminum foil.
4. Bake chicken 1 hour and 15 minutes. Remove lid or covering and bake for another 15 – 30 minutes until thermometer registers 180°F and/or juices run clear. Tent with foil for 10 – 15 minutes upon removal from oven before cutting or shredding.

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Member Spotlight: Nirmela Arsem – A global perspective with a local mission

By Robin Cook, City of Daytona Beach

Nirmela is the Manager of Laboratory Services at East Bay Municipal Utility District in Oakland, California. She grew up in Sri Lanka. As a youth, she learned how to knit from a British missionary, and later she added to this skill spinning wool into yarn. She still enjoys both hobbies today. Growing up in a third-world country, Nirmela saw the lack of food and water first hand. She knew she wanted to be part of the "green revolution" to improve food production and processing and to help the environment. It is not surprising then, that her other hobbies include gardening and activities involving working with her hands.

Nirmela actually came into the laboratory community by a happy accident. After having previously worked as a student research assistant, she applied for a lab tech position and stayed in the field. She worked for a commercial lab before transitioning to a utility lab, where according to Nirmela, *"I love what I do."* She believes the job has meaning beyond the money.

She graciously agreed to take a few moments to chat and answers some questions:

How did you become interested in science? *Science is logical and there is only one right answer. I liked this clarity. Also, science has practical application in real life that helps people. Fields in liberal arts, history and political science are so much opinion with many shades of gray.*

When you started working, what were your career goals/plans? *Growing up in a third world country, the problems I saw were lack of food and water for the average person and women being treated as second class citizens. I very much wanted to be part of the "green revolution" to improve food production, food processing, and the environment. While I was not clear how I was going to help women have some say in their lives, I was determined to have a career and be independent.*

Have you met them or have they changed since? *I am happy to be still engaged in a field that helps the average person and the environment that also has given me a career and a comfortable living. I am very pleased to see that women in Asia are engaged in careers and taking their destiny in their hands. This is a very positive development. My goals have changed in some respects. Now I am also interested in supporting local food production, local artisans and preserving unique cultures of communities – in spite of globalization.*

If so, why? *There are treasures in local communities – wisdom; whether it is a respect for the local environment, people supporting each other, or developing policies and practices that are good for that community, there is much to be learned at a local level. When policymakers are far from the realities of communities, even well-intentioned policies might have negative consequences. I would like to promote the wisdom of the small communities so that their own uniqueness and goodness is preserved.*

Member Spotlight: Nirmela Arsem – A global perspective with a local mission cont.

When did you attend your first TNI meeting? *2010*

What city was it held in? *Washington DC*

How many meetings have you attended? *Both winter and summer conference together, probably seven. I am also grateful that I was allowed to present at two NEMC conferences.*

Do you have a favorite meeting memory or moment? *Meeting Christine Sotelo (California ELAP Chief) in Chicago. She was surprisingly approachable and very down to earth.*

What is the best part of your career? *The work is never the same from one day to another. This challenges me to learn more every day and to keep pushing the envelope.*

What is the most challenging part of your career? *In my organization the laboratory is a small part of the supporting services to help water and wastewater operations. It is hard to compete for resources with high profile groups.*

What will you be doing in retirement? Still/stay involved in TNI? *I plan to move to San Juan Island, a small island in Washington State, close to Victoria, Canada. There I plan to be a subsistence farmer and be self-sufficient as much as possible. I would like to continue to be part of TNI as a volunteer. I will be willing to advocate for TNI is Washington State, although right now I am not sure what that exactly means.*

What is your most noteworthy accomplishment in your lifetime to date? *I lead a project to revamp an aging LIMS to bring it current with the operating systems. I was lucky to have a team of brilliant and dedicated staff to take on this challenge. Due to careful planning, systematic testing, and implementation, the project went without a glitch and was completed on time. I cannot claim that we came within budget – because there was no budget for this project. No additional lab staff or programmers were hired and there was no loss of productivity in the lab.*

What drives you towards success? *I am very much a grass roots person. I stay in the background and get things done. I like things to be perfect and don't like sloppy work. Good work eventually gets recognized.*

Do you have any insight or wisdom to share with other chemists or people starting out in the Environmental or quality assurance/control field/accreditation field? *This field is all about details. That is good to develop a solid base. However, for career development one needs to think broader and get involved in work that uses the data. Otherwise, in the course of time one would see colleagues moving up in career whereas the lab person remains in the lab.*

Do you have a life motto? If so, would you share it? *Not really a motto, more like an affliction – speak the truth. Don't say things to please people, but bring truth to all situations.*

Do you have anything else you would like to share with the TNI members? *I am always impressed with the amount of thought and discussion that goes into developing consensus standards. If that is understood, to a large extent the fear of adopting TNI standards in California will disappear. TNI could also think of ways to bringing California lab professionals into these discussions. Specifically for California, the frequently asked*

questions are: how does TNI improve quality and how much it will increase operational costs. Since public utilities are usually run by engineers, a concrete answer, supported by numbers will be needed to convince upper management. If TNI can publish this data/report, I could really use it.

When asked about her bucket-list of places to visit (no limits or restrictions), Nirmela said New Zealand. She has seen pictures and says it looks like a beautiful place. The diversity of the climates and ecosystems seems exciting. This environmentally diverse place seems a far cry from her childhood home, which she left due to civil war. She shared that she is very grateful to be in the United States where no one is really a foreigner. She is very appreciative of the sense of freedom that she has here especially as a woman. She says *"Americans do not realize how good and generous they are."*