Radiochemistry Expert Committee (REC)
Meeting Summary

November 28, 2018

1. Roll Call and Minutes:

Bob Shannon, Chair, called the meeting to order at 1:05 pm Eastern on November 28, 2018 by teleconference. Attendance is recorded in Attachment A – there were 12 members present. Associates: Jim Chambers, Sherry Faye, Carl Kircher, and Keith McCroan.

Meeting minutes are distributed by email for comment/revision for a week and then posted on the TNI website.

There was no meeting in October.

2. Standard

Bob reminded everyone to keep sending items for consideration for the revision of the Standard. The committee has not started this effort yet, but Bob has been keeping track of suggestions being made for the next update (Attachment D).

3. PT Acceptance Criteria

Bob asked Carl for a status update. Carl has it on the list, but it may be another month before he can look at it. He will let the committee know when he is ready to discuss it.

4. Checklists

Bob is still working on the Word version of the checklist. Greg and Robert suggested some additional changes and this will be looked at after the Milwaukee training presentation is complete. Carl is interested in receiving a copy of the checklist when it is completed.

Ilona commented that if changes need to be made, we will also want to look at the Excel version and make the changes there too. Any needed changes should be sent to Ilona.

5. Training on Alpha Spec Methods at Winter Meeting

Bob has been working with Sherry and Terry on the training. He sent it out for comment and did receive some comments.

Keith has some comments on equations that he will forward to Bob. Yoon has started her review and will send comments when she is done. Pepa will share the document with EPA for input too.

Once the presentation is complete, it will be sent to Ilona. The introduction portion will be pre-recorded and reviewed by the students that will attend in Milwaukee. That will help us end the training closer to 3 or 3:30pm Central so people can catch flights.

6. New Membership

There are four members rotating off the committee - Bob, Tom, Vas and Marty. Three new members just joined the committee and a fourth will join when Tom rotates off since they work for the same organization.

Terry has expressed some interest in stepping in as Chair. Terry has been an associate since the beginning of the committee. His work in a lab has him working with ABs, auditors, etc … He has a big picture view. Terry has been involved in Radiochemistry in the environmental field for 22 years and in the pharmaceutical field in the late 1980's.

Vas noted that candidates for Chair could have been sent out, but there is only one candidate. Bob did send an email asking about interest in taking the Chair and or Vice-Chair roles.

A motion was made by Tom to have Terry Romanko step in as Chair of the Radiochemistry Expert Committee. The motion was seconded by Vas. The motion was unanimously passed. Terry will think about what to do with the Vice Chair role.

Bob was thanked for the work he has done the last 6 years as Chair of the Committe and Tom, Marty and Vas were also thanked.

7. New Business

None.

8. Action Items

A summary of action items can be found in Attachment B.

9. Next Meeting and Close

There will be no meeting in December and the next meeting is scheduled for January 23, 2018 at 1pm Eastern.

A summary of action items and backburner/reminder items can be found in Attachment B and C.

The meeting was adjourned at 2:56pm Eastern.

Attachment A
Participants
Radiochemistry Expert Committee

Members	**Affiliation**		**Contact Information**
Bob Shannon (Chair) (2019) **Present**	QRS, LLC Grand Marais, MN	Other	BobShannon@boreal.org
Tom Semkow (Vice Chair) (2019) **Present**	Wadsworth Center, NY State DOH Albany, NY	AB	thomas.semkow@health.ny.gov
Sreenivas (Vas) Komanduri (2019) **Present**	State of NJ Department of Environmental Protection Trenton, NJ	Other	Sreenivas.Komanduri@dep.state.nj.us
Marty Johnson (2019) **Present**	US Army Aviation and Missile Command Nuclear Counting Redstone Arsenal, AL	Lab	Mjohnson@tSC-tn.com
Velinda Herbert (2021*) **Present**	National Analytical Environmental Laboratory	Lab	Herbert.velinda@epa.gov
Brian Miller (2021*) **Present**	ERA	Other	bmiller@eraqc.com
Terry Romanko (2021*) **Present**	TestAmerica Laboratories, Inc.	Lab	Terry.romanko@testamericainc.com
Ron Houck (2018*) **Present**	PA DEP/Bureau of Laboratories	AB	rhouck@pa.gov
Yoon Cha (2020) **Present**	Eurofins Eaton Analytical	Lab	YoonCha@eurofinsUS.com
Candy Friday (2020) **Absent**	CdFriday Environmental, Inc.	Lab	candy@fridayllc.com
Greg Raspanti (2022) **Present**	New Jersey Department of Environmental Protection	AB	Greg.Raspanti@dep.nj.gov
Pepa Sassin (2022) **Present**	EPA - Region 3	Other	Sassin.Pepa@epa.gov
Robert Aullman (2022) **Present**	Utah Department of Health	AB	aullman77@gmail.com
Ilona Taunton (Program Administrator) **Present**	The NELAC Institute	n/a	Ilona.taunton@nelac-institute.org

Attachment B

Action Items – REC

	Action Item	Who	Target Completion	Completed
90	Send note about method codes and concerns to the PT Expert Committee. Is there a way to limit the codes a lab can use to report PT data?	Bob	TBD	
91	Compile information about new PT Limit Process and discuss with EPA and send to the Chemistry FoPT Subcommittee Chair – Carl Kircher.	Bob and Keith	9/25/18	Complete
92	Forward new membership candidates to Bob Wyeth for approval.	Ilona	11/28/18	
93				

Attachment C – Back Burner / Reminders

	Item	Meeting Reference	Comments
5	Form subcommittee of experts in MS and other atom counting techniques to see that these techniques are adequately addressed in the radiochemistry module.	9/24/14	
6	From Action Item # 75: Prepare copy of Standard annotated with summary document language.		This is a project Carolyn was working on, but the committee decided it may duplicate the Small Lab Handbook. This project has been put on Hold.

Attachment D. Summary of Recommended Changes to the 2016 Standard

Suggestions for Changes, Clarifications, and Improvements to 2016 V1M6 – Radiochemistry

Tom

Section 1.7.1.5.c.ii)
Physical impossibility of measurement of Lucas Cell background per day of use after it has been filled with radon.
Sections 1.6.2.2.b) and 1.7.2.3.e.iii)
Three gamma energy ranges for DOC and two ranges for LCS are specified. Since LCSs are often used for DOC, it is inconsistent.
Section 1.7.1.4.a.iii)
No guidance is provided what to do if the instrument performance check source is compromised.
Sections 1.7.3.5.b) and 1.7.3.5.f)
Contradiction and a lack of logic in saying that "shall be reported directly as obtained" and then that specific requirements can take precedence over "shall". Then it should not be "shall".
Question: why does Module 6 have only one Section 1.0?
Page 3, Uncertainty, Counting

Change "…often estimated as the square root…" to "…often estimated as Standard Uncertainty by means of the square root…"

Page 3, Section 1.3.2, 1-st paragraph

Change "(e.g., calibrations,…)" to "(see Section 1.2)"

Page 4, Section 1.5.1.g NOTE

Change "The use…" to "For TNI accreditation, the use…"

Page 5, Section 1.5.2.1

Change "Minimal" to "Minimum"

Page 6, Section 1.5.4.c

The Section is out of alignment.

Page 6, Section 1.5.4.c.i

Change "If the experimentally-observed standard deviation at each testing level statistically exceeds the Standard Uncertainty, then the uncertainty estimate should be re-evaluated." to "If the experimentally-observed standard deviation from the precision evaluation statistically exceeds the Standard Uncertainty evaluation at each testing level, then the uncertainty estimate should be re-evaluated."

Or even better to "Otherwise, the uncertainty estimate should be re-evaluated."

Page 7, Section 1.5.4.c.ii

Note, however, that the new EPA procedure in EPA 815-B-17-003 requires a chi-square test at DL, which is a kind of precision evaluation.

Page 7, Section 1.5.5.b

The font for "b)" is too large.

Page 9, Section 1.6.3.2.c

Change "…each with activity consistent method…" to "…each containing activity consistent with method…"

Page 10, Section 1.7.1.2.a.i

Change "following" to "after"

Page 16, Section 1.7.1.6.e

Perhaps for gas proportional detectors also?

Page 17, Section 1.7.1.7

Change "1.7.2.3" to "1.7.2.2"

Page 19, Section 1.7.2.3.d

Change "Decision Level (Critical Value)" to "MDA"

There are problems, in my opinion with the whole sentence "When practical…". It leaves the reader wondering what should be the spiking level when sample activities are less than 10 times the Decision Level. In addition, the action levels by some agencies are [unreasonably] high, which would imply high LCS, which is not practical.

Page 19, Section 1.7.2.3.e

Change "The final…" to "The final prepared LCS needs to have the activity and its uncertainty known, however, it need not be strictly traceable to a national standard organization."

Page 20, Section 1.7.2.3.g; Page 24, Section 1.7.3.1.b; Page 24, Section 1.7.3.2.b; Page 24, Section 1.7.3.3.a.ii; Page 25, Section 1.7.3.3.b.iii

Delete "above"

Page 20, Section 1.7.2.4.a.iii

Change "1.7.2.3.e and 1.7.2.3.7.f" to "…d and …e"

Page 21, Section 1.7.2.4.a.viii

Change "The final…" to "The final prepared MS needs to have the activity and its uncertainty known, however, it need not be strictly traceable to a national standard organization."

Page 22, Section 1.7.2.6.c.i

Insert a comma after "e.g."

Page 25, Section 1.7.3.5.b

More on reporting as is, even if negative. In addition to my questioning this as a requirement, there are practical problems. It is easy to calculate for paired counting. Gamma spectrometry has a complicated series of criteria which determine if the radionuclide is identified. For Canberra software these include peak sensitivity: it cannot be lowered below the minimum value; critical level test: the user can disable it; peak tolerance

in keV; and nuclide identification threshold. The NID threshold involves self-absorption in the sample, presence of corroborating peak (e.g., in Co-60), decay correction, and other factors. Even if set low, the nuclide may not be detected.

. Are there any auditable requirements for items such as:
the sample has to be analyzed as a whole
only a single measurement is required
no repeated measurements are allowed
aliquoting is allowed or not allowed
sample can/cannot be split into sub-samples analyzed separately

Vas

Consider whether existing issues would benefit from being addressed as SIRs

Keith

1.7.2.3(d)

It makes a lot more sense to talk about activities x times the MDC than x times the critical level. The critical level isn't really a well-defined measurable quantity. As we ordinarily define and use it, it's just a statistic that can vary with each measurement. The MDC is the a priori concept, whose value we can estimate.

When we calculate the a priori MDC, we actually do calculate an a priori critical value, too, but that value is never recorded or used for anything else.

Bob

Explicitly clarify that QC data can by used as performance data for validation

The original intent to the introductory language in each section was to frame the requirements that follow - not to establish requirements. The original intent was to number all requirements to facilitate writing findings. Review all sections. Add any clarifying language needed to intro and move requirements to numbered sections.

Consider removing DOC requirements that are already addressed in Module 2. Include only the differences specific to radchem.

1.7.1.2 a) ii., iii., and iv. all describe the same situation – instrument response has changed. Would it not be good enough to put these together or even just to leave it be with iv.?

Consider updating requirements for RMBs – it may be appropriate to explicitly state that blanks should be set up along with samples - samples are handled and could become contaminated.

Consider updating requirements for standards. ISO requirements for standards are vague and make no distinction in requirements for reference materials used for calibration and QC/PT standards. One might consider uncertainty as a criterion although how does one evaluate the uncertainty of the material.

Right now, ISO providers are not required to intercompare . One might say that study performance will show problems (i.e., compare grand mean to true values) but that is putting the cart is before the horse. Round robin/consensus studies with labs of untested capability provide little in the way of confidence. Many people feel that the

approach in ANSI N42.22, which requires providers to participate in a Measurements Assurance Program (MAP) where the RM provider intercompares with an NMI, is the minimum that should be requires for calibration.

Define independent source – what is there is only one source - can procure two sources and handle differently.
Section 1.5.4 sets out requirements for reporting uncertainty. Is this just for the validation or for all results?
Add more sample specific QC criteria – FWHM, Quench or mass within range, etc.
In training session, someone brought up the issue of deleting points from calibration curves. Should we add something to the extent of saying that any measured data needs to be used unless there is a known and clearly documented reason why it is invalid, or why its deletion is not targeted at “cooking” the data?