Radiochemistry Expert Committee (REC)
Meeting Summary

May 7, 2014

1. Roll Call and Minutes:

Bob Shannon, Chair, called the meeting to order at 1:05pm EST on May 7, 2014. Attendance is recorded in Attachment A – there were 6 members present. Associate members: Joe Pardue, Brian Miller, Reed Jeffrey, Ron Houck, and Carl Kircher, Terry Romanko joined in after 2pm.

The April 23, 2014 minutes were distributed and will be reviewed and voted on by email or at the next meeting on 5/21/14.

Associate members need to let Bob and Ilona know they own a copy of ISO 17025 so they can be included in distributions of the draft working standard updates.

2. Standard

1.5.4 – Language for Uncertainty

Bob and Keith provided the following new language for this section:

a) Each radiochemical measurement shall be reported with an estimate of the uncertainty of the quantitative measurement result expressed either as an estimated standard deviation, (i.e., a *standard uncertainty)*, or a multiple thereof (i.e., an *expanded uncertainty)*.

i) Although the reported uncertainty should generally be an estimate of the total uncertainty of the measurement, for purposes of compliance with the Safe Drinking Water Act, or to comply with specific requirements established by regulators, or in contractual agreements, laboratories may report the counting uncertainty as specified in the appropriate method, regulation or contract, and documented in the laboratory SOP. All other radiochemical measurements shall be reported with an estimate of the total uncertainty of the measured result.

ii) Total uncertainty shall be documented in the laboratory's procedures or quality management program consistent with BIPM JCGM 100:2008: *Guide to the Expression of Uncertainty in Measurement* (GUM), the recommendations in the Multi-Agency Radiological Laboratory Analytical Protocols Manual Chapter 19

(MARLAP, Volume II, EPA 402-B-04-001B, July 2004), or other equivalent approaches.

b) The report shall clearly specify the type of uncertainty reported. The report shall:

i) The uncertainty shall be reported in the same unit of measurement as the measurement result unless the report clearly states otherwise.

ii) indicate whether the uncertainty is a total uncertainty or counting uncertainty;

iii) indicate whether the uncertainty is the standard uncertainty (i.e., "one-sigma") or an expanded uncertainty (e.g., "*k*-sigma"); and

iv) for expanded uncertainties, indicate the coverage factor (*k*) or the level of confidence.

1.5.4. a) Change to: Each measurement result shall be reported with an estimate of its uncertainty expressed either as an estimated standard deviation, (i.e., a standard uncertainty), or a multiple thereof (i.e., an expanded uncertainty).

1.5.4 b) i) Change to: express the uncertainty in the same unit of measurement as the measurement result unless the report clearly states otherwise.

Status on 1.7.2 Language about Random Processing of Samples/QC Samples (Tom, Vas, Richard, Marty, Bob)

New language:

1.7.2 …The laboratory shall process all batch quality control samples together with, and under the same conditions as, the associated samples, and shall use the same processes and procedures for preparation, analysis, data reduction and reporting of results. The laboratory shall not systematically or preferentially use specific detectors, equipment or glassware for the analysis of quality control samples. This should not preclude laboratories from segregating detectors, equipment, or glassware to minimize the risk of cross-contamination of samples or equipment as long as the criteria for segregation applies equally to batch quality control samples and samples.

No concerns were experessed with this new language. It will be added to the base document.

Section 1.7.3.5 (Larry)

The language proposed by Larry:

1.7.3.5 Reporting Results

a. Reports delivered to the laboratory's client shall be consistent with the requirements of this Standard (Volume 1, Module 2, Section 5.10). b. Results shall be reported directly as obtained, with appropriate units, even if the results are negative. c. Results shall be expressed with an appropriate number of significant figures.

d. All radiochemical results shall be reported with an estimate of uncertainty, as discussed in Section 1.6.5 above. e. Project or client specified reporting requirements can take precedence over the requirements of this standard.

Vas noted that he does not see 1.7.3.5 in the base document. Larry noted that it showed up in an earlier draft of the base document (4/2/14), but was not there today. Bob will update the standard and include this new language.

3. Analytical Batching Language – Section 1.7 (Tom, Bob, Terry and Carolyn)

The document originally sent out for this discussion was updated and Bob sent the new version out during the call. The committee should use Document 4a.

Tom reviewed the document and changes with the committee.

Bob commented that regulatory requirements always need to be considered and they take priority over what is in the standard. The new language Tom is proposing it is consistent with other parts of the standard.

Larry commented on Section 1.7.2 - Third sentence: Change the word "regulations" to "requirements". This makes it consistent with the second sentence.

Section 1.7.2 a): Bob commented that it should not focus on "analyte". It was suggested to look at "outcome of the test". Changed "measurement" to "test".

Section 1.7.2 b):

Tom proposed language for a new Section b). There would no longer be an i) and ii) – rather they would be combined. Bob expressed concerns about deleting the language. Bob noted that by changing this language you lose commonality between the samples. A lab might put samples with different matrices together. Bob points out that by losing the commality between samples and QC samples, the QC results would no longer provide data that reflect the quality of sample measurements. Using such an approach would not provide more feedback than is already being provided using instrument performance / background checks and would eliminate rationale for the QC checks.

Section b) ii): Tom asked if it should it be 7 days or 14 days? Tom thought 14 days would be better because it would be 10 working days. Bob commented that instrument checks would be done every 7 days, and he would not have a problem with 14 days.

Bob pointed out that the discussion on analytical batch lets a lab build a batch over the course of two weeks as opposed to the current one day. There needs to be more than just instrument checks – QC samples are needed. This is addressed under LCS.

Ron asked about limiting the analytical batch based on time if the background checks are fine and performance checks are fine. A new batch has to be set-up after the 14 days. Bob noted that right now a batch has to come together in one day. The committee wanted to improve the situation, but still ensure that the batch QCs reflect the data quality of associated sample. Ron asked how a new analytical batch is started. Bob commented that new samples are grouped and QC samples are assigned, etc …

Tom commented that he is still concerned about how QC is looked at in non-destructive analysis. He will contact Bob for further discussion. Tom had to leave the call.

Terry asked if samples could be processed on more than one detector. Bob agreed that it could be multiple detectors.

Ron asked what the difference is between a performance check and calibration verification. The calibration verification is method specific and requires a traceable source whereas the performance check need not be a traceable source. Bob noted that in previous versions of the standard, the term "calibration verification" has been use euphemistically for the performance checks which are different from calibration verifications. A true calibration verification must follow the initial calibration. What used to be called the calibration verification will now unambiguously be call the instrument performance check.

Larry confirmed that there is no language that restricts running the samples on different instrumentation.

Bob will leave the language for i) and ii) and talk to Tom.

Section 1.7.2.1 a): This brings things to the definition of an analytical batch. Add "analytical" to batch. Tom noted in the rewrite: For analytical batches, a calibration verification standard may be analyzed in lieu of the LCS.

Section 1.7.2.2 a) Analytical batch is included in text.

1.7.2.3: Analytical batch is introduced here too.

4. Review of Module 6 beginning with Section 1.7

Bob distributed this document by e-mail and still has not received very many comments. He asked that everyone review and comment before the 5/21/14 meeting.

5. PT Committee Discussions

The subcommittee meeting to work on the procedures to update FoPT limits has started meeting. There is nothing new to report.

6. New Business

None

7. Action Items

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

8. Next Meeting and Close

The next meeting will be May 21, 2014 at 1pm. This is an additional meeting and it is critical because it is the last one before the WDS is finalized.

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

The meeting was adjourned 2:39 pm EST. Motion: Vas Second: Larry Unanimously approved.

Attachment A
Participants
Radiochemistry Expert Committee

Members	Affiliation		Contact Information	
			Phone	Email
Bob Shannon (Chair) **Present**	QRS, LLC Grand Marais, MN	Other	218-387-1100	BobShannon@boreal.org
Tom Semkow (Vice Chair) **Present**	Wadsworth Center, NY State DOH Albany, NY	AB	518-474-6071	tms15@health.state.ny.us
Sreenivas (Vas) Komanduri **Present**	State of NJ Department of Environmental Protection Trenton, NJ	AB	609-984-0855	Sreenivas.Komanduri@dep.state.nj.us
Marty Johnson **Absent**	US Army Aviation and Missile Command Nuclear Counting Redstone Arsenal, AL	Lab	865-712-0275	Mjohnson@tSC-tn.com
Dave Fauth **Present**	Consultant Aiken, SC	Other	803-649-5268	dj1fauth@bellsouth.net
Carolyn Wong **Absent**	Lawrence Livermore National Laboratory Livermore, CA	Lab	925-422-0398	wong65@llnl.gov
Keith McCroan **Present**	US EPA ORIA NAREL, Montgomery AL	Lab	334-270-3418	mccroan.keith@epa.gov
Todd Hardt **Absent**	Pro2Serve, Inc. Oak Ridge, TN	Other	865-241-6780	HardtTL@oro.doe.gov
Nile Ludtke **Absent**	Dade-Moeller and Associates Oak Ridge, TN	Other	865-481-6050	nile.luedtke@moellerinc.com
Larry Penfold **Present**	Test America Laboratories, Inc; Arvada, CO	Lab	303-736-0119	larry.penfold@testamericainc.com
Richard Sheibley **Absent**	Sheibley Consulting, LLC	Other (Former AB)	651-485-1875	RHSHEIB111@yahoo.com
Ilona Taunton (Program Administrator) **Present**	The NELAC Institute	n/a	828-712-9242	Ilona.taunton@nelac-institute.org

Attachment B

Action Items – REC

	Action Item	Who	Target Completion	Actual Completion
47	Bob will distribute the updated base standard the committee has been working on. He is asking for comments before the 5/21/14 meeting. All changes from the 5/7 meeting will be incorporated into this update he will send.	Bob All	5/20/14	

Attachment C – Back Burner / Reminders

	Item	Meeting Reference	Comments
1	Update charter in October 2014	n/a	
2	Issue of noting modifications to methods.	1/16/13	
3	Look at batching when QC is looked at.	1/16/13	
4	Look at need to reference year for any standard references– which version is being referenced. Is this necessary?	5/22/13	