QA Strategy Workshop Notes
October 23-25, 2001
RTP, North Carolina

Development of Comprehensive QA system –

- Performance based
- Workable;
- Common sense;
- Good science
- Flexibility;
- Defendable and comparable;
- Balance w/legalities
- Need to cover both spectrums of air program expertise
  - specifics for those who don't want to/can't follow flexibility approach and tools to support flexibility
- Implementable

One quality system with different bars (graded approach) depending on intended use of data (SLAMS, PSD, AQI, SPM others)

Keep in mind developing a QA system for networks that don't exist yet.

A performance based approach that will lend itself to flexibility may put more responsibility on the State/local/Tribes for developing quality systems. Therefore there will be a greater importance and emphasis on QA project plans

Quality System Program Needs

- additional training
- oversight
- consistency in program w/PSDs (meld appendices 58 A and B)
- metadata elements telling data users what DQO is appropriate
- other data qualifiers may be needed
  - Will be much more important in Toxics program
  - Will be needed if graded approach is utilized and data collected for other objectives are reported top AIRS
  - Will need to provide consistent definitions for qualifiers (IDL, MDL, LOQ)
- Get QA results and their implications closer in time to data collection and before data use (or misuse!)

Quality Control

- Adequate but not excessive QC; e.g. automated precision checks
- Through-the-probe to get total system precision
- Workgroup developing these activities need to interface with Regulations group
- How to get consistency in integrity of probes?
- QC activities dependent on type of technology being used. Guidance should address different levels of technology.
- Training and continuing education needed with new technologies
- Use of automated zero-span, precision checks to validate data
- Encourage automated checks and use saved time to do other QA activities
- Use of round robins to test consistency within regions, between regions. Also use TSAs.
- Streamlining audit programs (audit auditors?), SRP & NPAP
- Reduce precision & accuracy checks for sites that prove good track record. If track record starts to go south, pick checks back up.
    -- frequency of checks
    –tightness of criteria

Ways of improving the activity:

- Automate measurement systems as much as possible. Providing state of the art measurement, data logging/data transfer and QC systems will provide coast savings in the long run and provide for QC at higher frequency at no additional cost.
- Automate zero/span - Some organizations may still be performing these manually and at less frequency than recommended.
- Through-the-probe zero/span/precision checks - have checks cover entire inlet/manifold systems
- Develop QC checks based on system performance. Some checks, due to better, more stable equipment may not need to be checked as frequently as required or suggested.
- Have vendors of new instruments be required to develop adequate SOPs as part of the reference and equivalency process (may need to be added to SOP form).

Action Items

- "Requirements" to test integrity of system
- Guidance on methods for setting up site and subsequent testing of integrity (good, bad, and ugly)

Funding Issues

- Grant process tie QA costs to monitoring costs
- Grant line-item for training
- Contractual mechanisms to provide support, such as DQO/DQA statistical support
- Support use of STAG resources for NPEP through-the-probe
- National air monitoring QA conference (annually) to help consistency (fund through 105, like AIRS conf.)
- Work with the grant process to ensure adequate resources for QA including training.

Training/Guidance

- Push training. Mechanisms for achieving training include writing into Grants (funds should be set aside in grant process), writing into QAPP, writing into TSA.
- "Certification/accreditation" - hierarchical approach -- OAQPS-Regions-State/local -
  - Develop accreditation programs for
    - Upper Management - QA 101, basic QA concepts
    - Ambient Air Monitoring Manager
    - Site operator
    - Calibrators
    - QA technician
    - Laboratory Scientist
    - QA manager
    - Information Manager
- Good historical examples -- PEP training, speciation training,
- All guidance combined into one document (Redbook)
- Training for managers so they understand components/need for QA
- Can OEI help? - Need to make their air program specific
- National air monitoring QA conference (annually) to help consistency (fund through 105, like AIRS conf.)
- More guidance for
  - NPAP participation/elevation; benchmarks; QA checks; flags (esp. HAPs) -- especially for performance based system (PAMS, Toxics)
- Experience w/monitors before full deployment.
- Make sure that vendors develop acceptable SOPS with products. Tie activity with FRM/FEM designation
- Add vendor training to vendor purchase orders
- Coordinate guidance document changes w/changes to CFR, especially regarding Performance Based Management System & "musts"
- Redbook needs updating -- have calls with states and regions
- Have groups (from Regions, States, locals) to develop quality system program
- Develop guidance document template for technical system audits and DQAs
- Training for TSAs, DQAs, and data validation
- APDLN - more hubs, e.g., Alaska, Guam
- Expand AMTIC Web links to training
- Need to look at sources for training
- Vendors - build training into purchase of equipment
- Large entities, such as HP (course on validating data software), may offer free courses
- Tribal training applicable to all, especially smaller states and locals.

Roles and Responsibilities-

- < Is QA manager responsible for misuse of data? Where does QA end and data analysis begin?
- < In the SLT organization there needs to be a group or resource that understands QA and the QA system and is empowered to and implements the quality system.
- < Need to have QA Manager identified in each SLT (Reporting Org?)

Data Certification Process

- < Provides an "official" statement of data validity
- < How to speed up? With the emphasis on real-time reporting, there is more incentive for earlier QA of data. The majority of the QA probably occurs soon after data collection. Then, some level of QC of data at a later date
- < QA of data may finish early but data then goes to information management where delays can occur.
- < Can certification take place on a quarterly basis
- < Increase in resources could get data in sooner
- < Can flagging help get data in sooner?

Regulation Development

- < Confusion between requirements and guidance
- < Define graded approach in CFR
- < Combine 58 Appendix A and B
- < Need boundaries - enough musts to implement measures of quality
- < minimum amount of "musts
- < Reduction in "musts" means we need even better and faster assessments as feedback
- < Cannot deploy network unless we run test sites (NCORE?) to determine appropriate "musts" and their boundaries/frequency.
  - ! Ncore might serve as test platforms
- < Revise CFR to quarterly certifications

Action Items:

- < Identify "musts" in regulation without describing frequency or acceptability.
- < Provide guidance that suggests what the musts should be.
  - ! Balances flexibility and specificity

Quality Management Plans

- < Increase consistency between EPA Regional offices on how they review QMPs.
- < Revise EPA QA/R-2 with the substantive changes discussed in Workshop.
- < Define needs for QMPs for all agencies.
- < OAQPS needs to define consistency first within and between Regions regarding approval of QAPPs, consistency in process and also language in QMP & QAPP

Action item:

- Develop consistent QMP language. OAQPS develop with regional input. Will not revise R2; will create ambient air specific R2.

Assessment and Reporting -- Site Characterization

- Problems with updating AIRS -- ensure that data accurately reflect what is found when conducting site visits. Training needed in how to do characterization and put into AIRS
- Approval for discontinuing monitor sites needs to be stressed
- Training also needed on how to do siting and over time evaluate whether siting is still appropriate.
- Incorporate spatial representativeness (or lack thereof) into DQOs.

Action items

- Set minimal level of conducting site evaluations (Redbook)
- OAQPS oversight is very helpful -- site visits annually for some (maybe with MSR)
- Determine how many site evaluations are being performed
- Guidance on timeliness and consistency in performing site evaluations
- Need a mechanism to ensure corrective action from evaluation and updates in AIRS

Performance Evaluations (NPAP/PEP/ SRP)

- Need to have some "musts"
- freq/schedule of checking/calibrating need to be reviewed
- Track traceability from SRP to field
- NPAP funding through STAG is appropriate
- through-the-probe program may be region-specific due to special cases
- Industry (PSD sites) pays for inclusion into NPAP

Action Items

- Definition/interpretation of primary and transfer standards
- Update guidance and make practical (SRP)
- Perform survey to determine "acceptable" PE programs in order to avoid redundancy.
- Make regs reflect "must" and refer to guidance (part of redbook) for detail
- Develop documentation for states that opt out of NPEP
- Audit PAMS and get results out before ozone season. Modify process to have:
  - round robin w/labs
  - Determine other ways to audit that provide more timely distribution of performance data.

Technical System Audits

- Expanded importance if going PBMS

Action Item:

- Review and develop "minimal" TSA form in Redbook
- Develop combo TSA, QSA audit form
- Develop Training on how to conduct TSA. Minimal steps to take during TSA. Include in Redbook
- Develop audit teams from SLT and Regions in order to share experience/knowledge
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Data Quality Assessments

- OAQPS will be responsible for DQAs for federally required data at reporting organization levels. Additional assessments at site specific levels will be the responsibility of SLT as described in their QAPPs.

Action Item:

- Need DQOs to do DQA - Work on priority DQOs
- Getting DQO tool working with AIRS
- Ensure AIRS summarizes data as DQOs indicate
- Tools to help w/DQAs, beginning with annual/3-year reports.

QAPPs

- Develop an Ambient Air Program graded approach
- Develop a template QAPP (fill in the blanks) -- generic for any air program, not just criteria pollutants
  –needs to handle graded approach

Data Validation/Verification

Ways of improving the activity:

- Technology is available for more real time validation that could free up resources for other activities: This could start with:
  - Use of data logging, telemetry or "lease-lines" to get data into information management systems and validation systems more quickly.
  - Use of computer technology by the site operator to access data that has been reviewed at the "central office" in order to implement corrective actions in a more real time mode
- Use of the new AIRS system to develop more data assessment/validation techniques that could then be consistently used by all SLTs.

< Continue the development of Validation Templates for the other criteria pollutants
< Development of critical review criteria in AIRS

Record Keeping

< Keep one copy in central location & a backup copy off site. Need to decide how much needs to be duplicated.

Action Items

< Recommendations/guidance for central filing system (Redbook) including what should be in those filing systems
< Look to see if there is a requirement for a central filing systems -- QA order 5360.1???
< Electronic record keeping -- check with OEI to see if electronic files are acceptable (legally defensible?)

Miscellaneous

< Data quality issues more associated w/lab, especially as monitor technology improves.

< Consistency in uploading precision data to AIRS [raw data (POC2) or P&A transaction] need guidance memo on how to upload data

< This workgroup should develop recommendation on procedure for getting precision data to AIRS

< What is reporting organization? Does this need to be re-defined or should the definition be strictly adhered

< Does AIRS only contain data of sufficient quality for NAAQS comparisons?