Part 75 Gas RATA Records

Relative Accuracy Test Audit (RATA)

- Gas RATAs are required initially to certify and periodically to quality assure SO_2 (ppm), NO_X (lb/mmBtu) and CO_2 (%) part 75 Continuous Emission Monitoring (CEM) systems
  - NO_X (ppm) systems may also require gas RATAs depending upon program applicability and the approach selected to determine NO_X lb/hr
- Part 60 and Part 75 RATAs are typically conducted simultaneously
- Hardcopy records for Part 60 and Part 75 gas RATAs do not have to be maintained separately; however, a clear delineation of Part 75 requirements and supporting documentation needs to be maintained in the hardcopy records (e.g. gas RATA report from stack tester)

Gas RATA Records

- Records to support the gas RATAs must be maintained for a minimum of three years from the date of the record (refer to 75.57(a))
- Maintain records and supporting information sufficient to substantiate compliance with all applicable sections and appendices found in part 75 (refer to 75.59(a)(7))

Gas RATA Records

- Electronic Gas RATA records reported to ECMPS are found in 75.64(a), which refers back to section 75.59
- 75.64(a) delineates between hardcopy and records submitted electronically via ECMPS (e.g. refer to 75.64(a)(2) and (a)(7))
- Instructions for electronic RATA records submission, refer to ECMPS QA reporting instructions section 2.5

Examples of RATA Records Submitted Electronically to ECMPS

- RATA test type, reason, results, dates
- Reference Method(s) used
- Run start and stop time and indicator of run status i.e., used or not used
- Average reference method and monitoring system value for each run
- Bias adjustment factor, relative accuracy, confidence coefficient
- Air Emissions Test Body and reference method calibration gas information
- Etc.

Examples of RATA Records not Submitted Electronically to ECMPS

- Gas RATA reference method sample probe location (i.e. single point, three point short line etc.)
- All stratification test records
- Reference method calibration test records (e.g. analyzer calibration error, drift, system bias and system calibration error)
- One minute CEM and Reference Method data
- Schematics
- Etc.

Hardcopy Records to Identify Reference Method Sampling Strategy

- Conduct the reference test methods allowed in section 6.5.10 of Appendix A to part 75, so they will yield results **representative** of the pollutant concentration, emission rate, moisture, temperature, and flue gas flow rate from the unit and can be correlated with the pollutant concentration monitor, CO_2 or O_2 monitor, flow monitor, and SO_2 or NO_X CEMS measurements (refer to Appendix A section 6.5.7)
- Locating the reference method sample probe properly is critical for obtaining a representative sample

Hardcopy Records to Support Part 75 Gas RATAs

- Reference method probe sample point location (i.e. single point, three-point short line)
  - Do the points selected meet the requirements of part 75 **Appendix A 6.5.6(b)**?
- Reference method 1 diagrams indicating reference method sample point location(s)
- Schematics indicating sample point and port locations in relationship to CEM probe, stack and duct work dimensions
- Do the summary tables in the hardcopy test reports match the reported values to ECMPS?
  - Ensure electronically reported Reference Method values and CEM values are not transposed
  - Averages of each run match values reported to ECMPS

Hardcopy Records to Support Part 75 Gas RATAs

- Stratification test data
  - Were the gas RATA runs sampled at a single point located at least 1.0 meter from the stack wall?
    - 12-point stratification test required prior to each gas RATA demonstrating the results meet the acceptance criteria (refer to Appendix A 6.5.6(b)(4) and 6.5.6.3(b))
  - Were the gas RATA runs sampled using the three-point short-line as specified in section 8.1.3 of PS No.2 found in Appendix B to part 60 and in a location where stratification was likely to occur (e.g., following a wet scrubber)
    - 12-point stratification or abbreviated stratification (if 12-point conducted previously) required prior to each gas RATA (refer to Appendix A 6.5.6(b)(3), 6.5.6.2 and 6.5.6.3(a))

Stratification Hardcopy Records

- The owner or operator shall keep the results of all stratification tests on-site, in a format suitable for inspection, as part of the supplementary RATA records required under § 75.59(a)(7) (refer to Appendix A 6.5.6.3(c))

Hardcopy Reference Method Convertor Test and Calibration Results

- Conduct NO_X convertor test before or after each RATA (refer to RM 7E section 8.2.4)
- Initial three-point calibration error test
- System bias and drift calibration error checks **after each run**
  - Portion of section 8.5 of RM 7E method allowing multiple sampling runs to be conducted before performing the post-run system bias check or system calibration error check is **not allowed** (refer to 75.22(a)(5)(v)
- Verify moisture measurements and corrections, if necessary, are conducted and calculated correctly

Hardcopy RATA CEM and Reference Method One Minute Data

- Each gas RATA run must include a minimum of 21 minutes of valid CEM data for comparison with the reference method data (refer to Appendix A sections 6.5.7(a) and 6.5.8)
- Run times should match run times reported to ECMPS
- Does each run contain a minimum of 21 minutes of valid data?
- Does reference method account for system response time to synchronize with CEMs? (refer to Reference Method 7E section 8.2.6)
  - Consider the response times of the pollutant concentration monitor, the continuous emission monitoring system, and the flow monitoring system to ensure comparison of simultaneous measurements (refer to Appendix A section 6.5.8)

Electronic Reported vs. Hardcopy Record Consistency

- Hardcopy test reports need to demonstrate RATAs are conducted in accordance with Part 75 and the information must match the information reported electronically (e.g. run times, runs used, BAF, RA etc.)
- If more than nine runs are conducted during a gas RATA, the same runs reported as used for the electronic report must be documented by the hardcopy report
  - Don’t document RA’s and BAFs that don’t match, for the same RATA, because the hardcopy test report uses runs 3-11 and the electronic test report uses runs 1-9

QA/QC Plan and Trial Run Records

- Keep a written record of procedures and methods used for relative accuracy test audits, such as sampling and analysis methods. (refer to section 1.2.3 of appendix B to part 75)
- A record of all RATAs, trial RATA runs and RATA attempts (whether reported or not) must be kept on-site as part of the official test log for each monitoring system. (refer to section 2.3.3(h) of appendix B to part 75)

Questions?

- Question's
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Conditional Data

- Question - “One idea around a recent point of confusion, asking him to go over the differences in an initial certification when conditional data validation procedures are applied vs. when they are not. Are you always free to choose whether you conditionally validate data or not?
- Answer – The use of conditional data is NEVER required. Conditional data MAY be used for initial, recertification and after other maintenance activities (changing polynomial coefficients on a stack flow CEM) to minimize the reporting of substitute data.
  - Conditional data validation is not routinely used for initial certification of a new unit after commencement of commercial operation (CCO) prior to completing initial certification of all CEM systems (e.g. Appendix D and CEMS)
  - Hourly emissions data prior to calendar day 180 after CCO is not required to be reported for ARP and CSAPR until all CEMS are certified
  - Conditional data validation is used frequently for recertification (e.g. replacement of a CEM analyzer) or prior to completing diagnostic tests (e.g. three load flow RATA)
- Refer to 40 CFR 75.20(b)(3)(i) and (ii)

Conditional Data

- How do validation procedures differ for each initial certification method?
- Answer – Data validation procedures are basically two approaches. Measured emissions data is either invalid until all tests (e.g. RATA, linearity checks, 7-day drift, cycle time test, DAHs verification) are completed or measured emissions data is conditionally validated upon successful completion of each required test w/o making additional changes to the CEM equipment. Routine adjustments after daily calibrations towards the calibration gas bottle tag values are allowed and do not invalidate conditional data prior to the adjustments.
- Refer to 75.20(b)(3)(i), (ii) and (iii)
- How do CEMS begin times in the Monitoring Plan differ for each method?
- Answer – Initially, the begin times of the methods (e.g. Appendix D and CEMs NOx lb/mmBtu for a combustion turbine) must be the same and typically coincide with the completion of the last test (e.g. gas RATA) necessary to complete CEMs certification. This is the begin reporting date. Hourly emissions data is not reported until ALL systems, methods are certified.
- Need to coordinate very closely with CAMD (currently Craig Hillock) during initial certification

Certification tests

- How does a failed daily cal not use for 7-day drift impact remaining certification tests in both methods?
- Answer – Depends. If a daily calibration error test is failed during a recertification test period (*i.e.*, the results of the test exceed twice the performance specification in section 3 of appendix A to this part), the CEMS is out-of-control as of the hour in which the calibration error test is failed. Emission data from the CEMS shall be invalidated prospectively from the hour of the failed calibration error test until the hour of completion of a subsequent successful calibration error test following corrective action, at which time the conditionally valid status of data from the monitoring system resumes. To get the CEM to pass a subsequent calibration error test do you have to make repairs or reprogram the CEMS that could impact the ability to successfully complete any tests conducted prior to the failed test and subsequent repairs? If yes, data should be invalidated back to the probationary calibration and then another probationary calibration can be conducted resuming conditional data. Any tests conducted prior to the repairs need to be repeated.
- Refer to 75.20(b)(3)(v) **routine adjustments only, during the recertification test period**

Failed QA Certification Test

- How does a failed certification test impact overall certification for both methods?
- Answer – Both methods? A failed CEM test has no impact on other methods (e.g. Appendix D). Perhaps the question was asking about how certain failed certification tests impact data validation. A failed linearity check, RATA, or cycle time test would invalidate data back to the probationary calibration and any tests conducted prior to the failed test would have to be repeated. A failed 7-day drift daily test only impacts prior tests if repairs are made that would impact the validity of previous tests. A failure (greater than twice the 7-day drift spec) invalidates data from the failed calibration to a subsequent passed calibration and also restarts the 7-day calibration
- All recertification tests shall be performed hands-off. No adjustments to the calibration of the CEMS, other than the routine calibration adjustments following daily calibration error tests as described in section 2.1.3 of appendix B to this part, are permitted **during the recertification test period**. (refer to 75.20(b)(3)(v))
- Refer to 75.20(b)(3)(vii)(C) failed daily calibration, routine adjustment only
- If a 7-day calibration error test is failed within the recertification test period, previously-recorded conditionally valid emission data from the CEMS are not invalidated. The conditionally valid data status is unaffected, unless the calibration error on the day of the failed 7-day calibration error test exceeds twice the performance specification in section 3 of appendix A to this part, as described in paragraph (b)(3)(vii)(D) of this section
- Any failed daily calibration, during the 7-day drift test, restarts the 7-day drift test

Part 75 Q&A Technical Manual

- Part 75 Monitoring Emissions Technical Q&A "…provides clarification only; it cannot create any rights enforceable by any party in litigation with the United States. EPA may decide to follow the clarification provided in this document, or to act at variance with this clarification, based on its analysis of the specific facts presented." Most sites use this information assuming it demonstrates the equipment is regulatorily compliant. The above language makes that assumption seem arbitrary and without authority. How should the Technical Q & A be used, when it comes to demonstrating compliance