



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

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OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Use of PM Reference Methods and Daylight Savings Time

FROM: J. David Mobley, Acting Director
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TO: Deputy Director, Office of Ecosystem Protection, Region I
Director, Environmental Planning and Protection Division, Region II
Director, Air Protection Division, Region III
Director, Air, Pesticides, and Toxics Management Division, Region IV
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During implementation of the PM_{2.5} network, many specific technical questions have arisen requiring interpretation of the Reference Method for Determination of Fine Particulate as PM_{2.5} in the Atmosphere. In order to ensure national consistency, documents, such as the quality assurance guidance document 2:12, were written to address some of these questions. One such question recently received at OAQPS is how State and local air monitoring agencies should deal with the issue of daylight savings time with regards to the period of sample collection for PM monitors. Since this issue is not currently covered in the QA guidance document 2:12, this memorandum serves to provide the guidance.

In order to address this question, several issues need to be discussed, including the regulatory requirements.

The regulations for the sampling period are identified in 40 CFR Part 50, Appendix L, section 3.3, which state: "Sample period. The required sample period for PM_{2.5} concentration measurements by this method shall be 1,380 to 1500 minutes (23 to 25 hours)." No mention of a starting time or a reference to standard or daylight savings time occurs. However, in Appendix N to Part 50 - Interpretation of the National Ambient Air Quality Standards for Particulate Matter, section 1.0 states "A Daily value for PM refers to the 24-hour average concentration of PM calculated or measured from midnight to midnight (local time) for PM₁₀ or PM_{2.5}."

The OAQPS, with the support of the Regions, has investigated this question further since many State and local air monitoring agencies asked why this policy had been put in place. While investigating this question, several points have been made by Regional and State and local personnel:

- The AIRS data handling guidance document identifies that all air monitoring data are to be reported on standard time (AIRS User's Guide Volume AQ2: Air Quality Data Coding, section 7.2.3).
- If agencies were to have to adjust their samplers clock for daylight savings time, then operating on a 1-in-3 or 1-in-6-day sample schedule would provide an easy transition in that the clocks can be adjusted on a nonsample day. However, for agencies that operate a daily sampling site with a PM_{2.5} FRM sampler, adjustment of the clock cannot be done during a run day. In this case, the adjustment would best be done on a day that is a down day for the sampler. Down days are generally not scheduled for daily sampling sites and therefore two sample days a year would be missed or agencies could wait until a non-scheduled down day occurred, in which case, there would be some number of days that were still collected on standard time in the spring when it should have been daylight savings time and daylight savings time in the fall when it should have been standard time.
- Both State and local agencies and the Regions expressed the need to correlate PM_{2.5} FRM data with PM_{2.5} continuous data and data from the other criteria pollutants. This is extremely important, as the need to develop a PM_{2.5} continuous sampler that has FEM approval is dependent on correlation with the FRM over a wide variety of conditions. Since continuous monitor data loggers run on standard time, FRM's would also need to run on standard time.
- A few areas of the country do not participate in daylight savings time. Thus, comparing data from adjacent areas that do and do not participate in daylight savings time may be misinterpreted by data users. By having a national policy of using standard time, data users will not have to worry about adjusting some data by 1 hour.
- Many Regions identified that most, and in some cases, all of their State and local historical PM data sets were collected on standard time year round.
- All Regions identified that most, and in some cases, all of their State and local agencies desired not to change their PM monitors clock and do wish to sample on standard time.

The OAQPS believes that a consistent national policy needs to be put into place to reconcile the differences between 40 CFR Part 50, Appendix N; the AIRS data handling guidance; the capabilities of the sampler; the need to correlate FRM measurements with potential continuous PM_{2.5} FEM's; the need to correlate PM_{2.5} FRM measurements with other criteria

pollutants; the need to correlate new PM data with the historical data set; and the need to provide a common sense policy that stakeholders can support.

Since the primary reason that Appendix N identified a sample on local time was for consistency with EPA regulations since 1979 and most existing PM data was taken on standard time, Appendix N should be corrected. For this reason as well as those cited above the OAQPS expects to issue a corrections notice in 40 CFR Part 50, Appendix N, section 1.0, that will identify the Daily value as: “Daily value for PM refers to the 24-hour average concentrations of PM calculated or measured from midnight to midnight (standard time) for PM₁₀ and PM_{2.5}.” A similar corrections notice may also take place in Appendix K to Part 50, which covers PM₁₀ only.

Monitoring agencies that have not changed their PM samplers clocks to daylight savings time since the change on April 4, 1999, should continue to operate on standard time. Monitoring agencies that have changed their PM samplers clocks from standard time to daylight savings time should change them back at their earliest convenience. All data collected, whether on standard time or daylight savings time, will still be considered valid for purposes of it being a midnight to midnight sample. While the need to change a few PM samplers clocks from daylight savings time back to standard time will require some resources, the OAQPS believes that in the long run this policy will require less resources since PM monitor clocks will never have to be changed.

We hope this guidance will help clarify the issue of PM sample times while State and locals and the Regions work through the implementation details of the PM_{2.5} network. Please contact Tim Hanley (919/541-4417) if there are any questions in this regard.

cc: Director, Office of Environmental Measurement and Evaluation, Region I
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