

APPENDIX M TO PART 50 [RESERVED]

APPENDIX N TO PART 50—INTERPRETATION OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR PM_{2.5}

1. General

(a) This appendix explains the data handling conventions and computations necessary for determining when the annual and 24-hour primary and secondary national ambient air quality standards (NAAQS) for PM_{2.5} specified in §50.7 and §50.13 of this part are met. PM_{2.5}, defined as particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers, is measured in the ambient air by a Federal reference method (FRM) based on appendix L of this part, as applicable, and designated in accordance with part 53 of this chapter, or by a Federal equivalent method (FEM) designated in accordance with part 53 of this chapter, or by an Approved Regional Method (ARM) designated in accordance with part 58 of this chapter. Data handling and computation procedures to be used in making comparisons between reported PM_{2.5} concentrations and the levels of the PM_{2.5} NAAQS are specified in the following sections.

(b) Data resulting from exceptional events, for example structural fires or high winds, may be given special consideration. In some cases, it may be appropriate to exclude these data in whole or part because they could result in inappropriate values to compare with the levels of the PM_{2.5} NAAQS. In other cases, it may be more appropriate to retain the data for comparison with the levels of the PM_{2.5} NAAQS and then for EPA to formulate the appropriate regulatory response.

(c) The terms used in this appendix are defined as follows:

Annual mean refers to a weighted arithmetic mean, based on quarterly means, as defined in section 4.4 of this appendix.

Creditable samples are samples that are given credit for data completeness. They include valid samples collected on required sampling days and valid "make-up" samples taken for missed or invalidated samples on required sampling days.

Daily values for PM_{2.5} refers to the 24-hour average concentrations of PM_{2.5} calculated (averaged from hourly measurements) or measured from midnight to midnight (local standard time) that are used in NAAQS computations.

Designated monitors are those monitoring sites designated in a State or local agency PM Monitoring Network Description in accordance with part 58 of this chapter.

Design values are the metrics (i.e., statistics) that are compared to the NAAQS levels to determine compliance, calculated as shown in section 4 of this appendix:

(1) The 3-year average of annual means for a single monitoring site or a group of monitoring sites (referred to as the "annual standard design value"). If spatial averaging has been approved by EPA for a group of sites which meet the criteria specified in section 2(b) of this appendix and section 4.7.5 of appendix D of 40 CFR part 58, then 3 years of spatially averaged annual means will be averaged to derive the *annual standard design value* for that group of sites (further referred to as the "spatially averaged annual standard design value"). Otherwise, the annual standard design value will represent the 3-year average of annual means for a single site (further referred to as the "single site annual standard design value").

(2) The 3-year average of annual 98th percentile 24-hour average values recorded at each monitoring site (referred to as the "24-hour standard design value").

Extra samples are non-creditable samples. They are daily values that do not occur on scheduled sampling days and that can not be used as make-ups for missed or invalidated scheduled samples. Extra samples are used in mean calculations and are subject to selection as a 98th percentile.

Make-up samples are samples taken to supplant missed or invalidated required scheduled samples. Make-ups can be made by either the primary or the collocated instruments. Make-up samples are either taken before the next required sampling day or exactly one week after the missed (or voided) sampling day. Also, to be considered a valid make-up, the sampling must be administered according to EPA guidance.

98th percentile is the daily value out of a year of PM_{2.5} monitoring data below which 98 percent of all daily values fall.

Year refers to a calendar year.

2.0 Monitoring Considerations.

(a) Section 58.30 of this chapter specifies which monitoring locations are eligible for making comparisons with the PM_{2.5} standards.

(b) To qualify for spatial averaging, monitoring sites must meet the criterion specified in section 4.7.5 of appendix D of 40 CFR part 58 as well as the following requirements:

(1) The annual mean concentration at each site shall be within 10 percent of the spatially averaged annual mean.

(2) The daily values for each site pair among the 3-year period shall yield a correlation coefficient of at least 0.9 for each calendar quarter.

(3) All of the monitoring sites should principally be affected by the same major emission sources of PM_{2.5}. For example, this could be demonstrated by site-specific chemical speciation profiles confirming all major component concentration averages to be within 10 percent for each calendar quarter.