Section 8 - Regulation Changes

8.1 Overview

There are three main federal regulations that are used to provide the framework for ambient air quality monitoring: 40 CFR Parts 50, 53, and 58. Part 50 applies to the NAAQS and the federal reference methods for each pollutant; Part 53 provides air quality monitoring equipment vendors with the application and testing requirements for federal reference and equivalency methods; Part 58 applies to ambient air quality surveillance, and is the primary focus for these regulation changes. Making changes to the regulations at this time will help remove obstacles for implementing the Strategy and codify NCore, and will only set minimum requirements with the understanding that state/local agencies and tribes can, and are encouraged to, exceed such minimums.

Within 40 CFR Part 58, there are a number of regulation changes which are necessary to foster the implementation of the Strategy, including:

- Network design changes
- Minimum monitoring criteria
- Replacement of NAMS/SLAMS with NCore
- Changes to the PAMS requirements
- Changes to information reporting requirements
- Movement toward performance-based systems
- Movement toward a graded quality assurance approach
- Movement toward more advanced information transfer technologies

In addition, there has not been a holistic review of Part 58 since the origination of this regulation over 30 years ago. Therefore, additional changes will help to simplify, consolidate, and clarify the existing language where appropriate, thereby reducing redundant or confusing aspects of the regulation. It should be noted that changes to Part 58 is an official process with its own public review and comment process. As a result, this section can only describe the features of the intended changes; the actual details will be part of that separate regulatory process.

8.2 Background Process

The development of the regulation elements needing to be modified has been an ongoing effort via a workgroup process between EPA and state and local agencies, as well as interaction with the NMSC. Since 2000, the workgroup has had many conference calls to identify: (1) those portions of the regulations needing review and revision; (2) initial suggestions for changes; (3) key issues and resolution of those issues; (4) development of and comment on early draft language. While the final proposed regulation is entirely under EPA's purview, much of the necessary background effort was done in cooperation with the state and local agencies.

8.3 Network Design and Criteria

One of the fundamental changes to the regulations is to remove the references to NAMS and SLAMS sites and to define NCore as the new national monitoring program. The revised regulation would establish:

- NCore monitoring purposes:

  - Highest concentration
  - Typical concentration in highest population density
  - Impact of significant sources
  - Regional pollutant transport
  - Background
  - Impacts on visibility, vegetation, welfare

- NCore monitoring objectives:

  - NAAQS compliance
  - Emissions strategy development and accountability
  - Timely reporting of data to the public
  - Support for air pollution/health studies

- NCore design criteria, including specific requirements for the number of NCore Level 2 sites by population, and the minimum level of multi-pollutants to be monitored (Table 8-1).

Table 8-1. NCore Design Criteria

Requirement	Number of Level 2 Sites	Total # Level 2 Sites
Each State	1	50
One additional for OH ,IL, PA, MI, NC	1	5
Two additional for NY, CA, TX, FL	2	8
Additional Rural Sites	12	12
TOTAL		75

- NCore minimum requirements for ozone monitoring (Table 8-2),

Table 8-2. NCore Ozone Monitoring			
CBSA, or county population for areas outside of a CBSA	**Most recent 3-yr design value concentrations >115% of any ozone NAAQS**	**Most recent 3-yr design value concentrations ±15% of any ozone NAAQS**	**Most recent 3-yr design value concentrations <85% of any ozone NAAQS**
>10 million	3	4	2-3
4-10 million	2	3	1-2
1-4 million	2	2-3	1
350k-1 million	2	2	1
200k-350k	1	1-2	0
<200k	1	1	0

- NCore minimum requirements for $PM_{2.5}$ (Table 8-3),

Table 8-3. NCore Requirements for $PM_{2.5}$			
CBSA, or county population for areas outside of a CBSA	**Most recent 3-yr design value >115% of any $PM_{2.5}$ NAAQS**	**Most recent 3-yr design value ±15% of any $PM_{2.5}$ NAAQS**	**Most recent 3-yr design value <85% of any $PM_{2.5}$ NAAQS**
>1 million	2-4	3-6	2
500k-1million	1-2	2-3	1
250k-500k	1	1-2	0
100k-250k	1	1-2	0
<100k	1	1	0

- NCore minimum requirements for continuous $PM_{2.5}$ monitors, for example, of one-half the required number of FRM samplers.

- NCore minimum requirements for $PM_{2.5}$ background, transport, and speciation sites.

- NCore minimum requirements for PM_{10} monitoring (Table 8-4),

Table 8-4. NCore PM_{10} Monitoring		
CBSA, or county population for areas outside of a CBSA	**Most recent 3-yr design value >85% of any PM_{10} NAAQS**	**Most recent 3-yr design value <85% of any PM_{10} NAAQS**
>1 million	3-6	1
500k-1 million	2-3	0
250k-500k	1-2	0
<250k	1	0

- NCore requirements to monitor for lead, as part of a national lead trends site assessment, in at least one location in each of the 10 EPA Regions. A location could be within the largest CBSA with a Region, or alternatively, at one of the Urban Air Toxics Trends sites within the Region.

- NCore requirements for other pollutants including carbon monoxide, nitrogen dioxide (to include reactive nitrogen gases, NOy), and sulfur dioxide.

- Requirements to leverage other monitoring programs into the NCore Level 2 site designs. These could include PAMS, air toxics monitoring sites, and $PM_{2.5}$ chemical speciation trend sites.

8.4 Changes to the PAMS Network

Consistent with the multi-pollutant objectives of NCore Level 2 sites, the PAMS sites provide more comprehensive data pertinent to ozone air pollution in non-attainment areas classified as serious, severe, or extreme. There are four types of PAMS sites, but the primary focus shifts to the Type 2 PAMS sites: those areas where maximum ozone precursor emissions are expected.

Table 8-5. Minimum Requirements Established for PAMS Sites		
Measurement	**Where Required**	**Sample Frequency (except upper air meteorology)**
Speciated VOC	Two sites per area; one must be at a Type 2 site	During PAMS monitoring periods: –hourly auto GC –8 3-hr canisters –1 morning, 1 afternoon canister plus continuous NMHC measurement
NOx	All type 2 sites	Hourly during ozone season
NOy	One site per area, either at Type 1 or Type 3 site	Hourly during ozone season
CO (ppb level)	All sites	Hourly during ozone season
Ozone	All sites	Hourly during ozone season
Surface met	All sites	Hourly during ozone season
Upper air met	One site in PAMS area	Sample frequency must be approved as part of the PAMS Network Description

8.5 Network Assessments

The regulation changes will include requirements for a network assessment every five years. (See Section 5 for a discussion of the current round of network assessments.) Along with this will be requirements for SLTs to develop a schedule for implementing the network changes consistent with the findings of the assessment. The final recommendations would have to be approved by the Regional Administrator prior to actually making the network changes. Where deemed necessary and appropriate, other network changes would be permitted in the years between network assessments.

8.6 Performance-Based Measurement Systems (PBMS)

As the move toward PBMS occurs, there will need to be some changes to the CFR. Instruments used for NAAQS comparison purposes will continue to meet performance specifications of the FRM/FEM criteria. For NCore Level 2 objectives, instruments serving other objectives will need to meet minimum data quality requirements developed through the DQO process, and these will be defined in regulation changes as well as guidance. More detailed discussions are presented in Section 7.

8.7 QA Related Changes to 40 CFR Part 58 Appendix A

The following regulation changes are expected:

- Combine Appendices A and B into Appendix A
- Process for QMP and QAPP approval
- Responsibility for providing DQOs
- Graded approach to QA
- Quality assurance lead person
- Defining a reporting organization; and primary quality assurance organization
- Removal of SO_2 and NO_2 manual audit checks
- Bi-weekly precision checks - changes in ranges
- Change PM_{10} co-location requirements to be that of $PM_{2.5}$
- Provide for quarterly data certifications
- Revise automated precision and bias statistics

Each of these is described in more detail in Section 7.2.

8.8 Timelines

It is expected that proposed regulations will be available for public review by November 2004 with final promulgation by June 2005.