

9.0 Contingency Measures

This chapter describes the Clean Air Act's contingency measures requirement and demonstrates that Connecticut's contingency plan provides sufficient emission reductions to comply with the requirement.

9.1 Contingency Plan Requirements

All PM_{2.5} nonattainment area SIPs must include contingency measures consistent with CAA Section 172(c)(9). Contingency measures are additional control measures to be implemented in the event that an area fails to either meet reasonable further progress¹ (RFP) requirements or attain the standards by the required attainment date.

Contingency measures must be fully adopted rules or control measures that are ready to be implemented quickly upon failure to meet RFP or failure of the area to meet the standard by its attainment date. The SIP should contain trigger mechanisms and a schedule for contingency measure implementation, as well as indicate that implementation will not rely on any further action by the State or EPA. States may also use as contingency measures one or more Federal or local measures that are already in place and provide reductions that are in excess of the reductions required by the attainment demonstration or RFP plan.

The PM_{2.5} Implementation Rule also specifies that a contingency plan should "provide for emission reductions equivalent to about one year of reductions needed for RFP, based on the overall level of reductions needed to demonstrate attainment divided by the number of years from the 2002 base year to the attainment year."²

Section 179(c)(1) of the CAA requires the EPA Administrator to determine, within six months of the required attainment date, whether each nonattainment area has attained the NAAQS by the attainment deadline. Such determination must be published in the Federal Register. CAA Section 179(d)(1) specifies that those areas found not to attain by the required attainment date be provided one year from the Federal Register notice to submit a revised SIP describing how and when the area will achieve attainment.

As the required attainment date for the NY-NJ-CT PM_{2.5} nonattainment area is April 5, 2010, the EPA Administrator has until October 5, 2010 to analyze air quality data and determine whether the area attained the PM_{2.5} NAAQS; such a finding is published in the Federal Register. Assuming EPA adheres to this schedule, areas identified as not attaining the NAAQS will be required to begin implementation of their contingency measure plans upon EPA's publication of a Federal Register notice in October 2010. The emission reductions realized by the contingency plan will ensure continued progress toward attainment during the one-year period (i.e., until October 2011) in which the CAA allows states to prepare revised SIPs providing for expeditious attainment.

¹ 72 FR 20633 (April 25, 2007). Nonattainment areas that demonstrate attainment by 2010 will be considered to have satisfied the RFP requirement.

² 72 FR 20643.

9.2 Connecticut's Contingency Measures Plan

The purpose of a contingency plan is to ensure that continued progress toward attainment occurs during the period when affected states would be required to revise their air quality plans in the event that EPA makes a finding that an area failed to comply with an air quality standard by the required attainment date. To accomplish this goal, EPA's PM_{2.5} Implementation Rule indicates that contingency plans should provide emission reductions equivalent to one year's worth of the reductions required for attainment. EPA specifies a procedure that uses total PM_{2.5} and precursor emissions in the base year and required attainment year to calculate the required contingency plan emission reduction. Although this procedure may be an appropriate method for ensuring continued progress in most cases, CTDEP has concluded that strict application of EPA's procedure is not appropriate for Connecticut's situation. The rationale for this conclusion is summarized below. An alternate procedure is also described that makes more sense for Connecticut's situation and will therefore be used to develop Connecticut's contingency plan. CTDEP's rationale is as follows:

- All Connecticut PM_{2.5} monitors remain in compliance with the annual PM_{2.5} NAAQS.
- All violating monitors in the NY-NJ-CT nonattainment area are located in New York City and nearby New Jersey urban areas. The violating areas in New York and New Jersey are located upwind of Connecticut during periods when high PM_{2.5} levels most frequently occur. This observation is corroborated by EPA's CAIR modeling analysis,³ which concluded that SO₂ and NO_x emissions from sources located *within* Connecticut's borders do not significantly impact violating PM_{2.5} monitors in New York and New Jersey.
- Based on the above, it follows that a contingency plan that provides additional emission reductions from sources *within* Connecticut's borders will not result in significantly improved air quality at any monitors in New York or New Jersey that might remain in non-compliance of the annual PM_{2.5} NAAQS after the required 2010 attainment date.
- A primary reason EPA decided to include portions of Connecticut in the multi-state NY-NJ-CT nonattainment area was due to a concern that Connecticut motor vehicles traveling into New York City might have a direct local contribution to violating monitors.⁴ Presuming that assertion to be true, it follows that Connecticut's contingency plan should be structured to focus on Connecticut's on-road motor vehicle fleet to ensure that emissions from that source sector continue to decline in the 2009 to 2012 timeframe, the period when EPA will determine if air quality plans must be updated due to a failure to reach timely attainment.

Based on the discussion above, Connecticut's revised contingency plan is comprised of the federal control measures required for new gasoline and diesel powered automobiles and trucks. These control programs, which are described in Chapter 4.3.1 and Table 4-3 of this attainment demonstration, will continue to provide significant emission reductions in the post-2009 period.

³ See Section VII of EPA's "Technical Support Document for the Final Clean Air Interstate Rule: Air Quality Modeling; March 2005; See: <http://www.epa.gov/cair/pdfs/finaltech02.pdf>.

⁴ Letter from EPA Administrator Stephen L. Johnson to CTDEP Commissioner Gina McCarthy; December 5, 2005; available at: http://www.ct.gov/dep/lib/dep/air/particulate_matter/pm25planning/epapm25reconsiderdesignationresponseletter.PDF.

Projected emissions for Connecticut's on-road motor vehicle fleet are summarized in Table 9-1. Projected emissions are shown for primary PM_{2.5} and NO_x for the years 2002, 2009 and 2012. The required contingency plan reduction targets are also listed, calculated as the average yearly reduction in on-road motor vehicle emissions projected to occur between the base year and attainment year inventories (i.e., 1/7th of the reduction between 2002 and 2009 emission levels). Actual emission reductions expected from the contingency plan are listed in the last column of Table 9-1, representing the emission reductions expected from the on-road motor vehicle fleet between 2009 and 2011, determined assuming linear decreases in emissions between 2009 and 2012. Note that sulfate impacts from Connecticut vehicles traveling near New York City monitors are considered to be insignificant due to Federal fuel sulfur limits that were implemented during the 2002 to 2009 planning period, resulting in sulfur reductions of 90% for gasoline and 97% for diesel fuel from previous levels.

Table 9-1. Analysis of Emissions from Connecticut's Motor Vehicle Fleet

Pollutant³	2002 Emissions (tons)	2009 Emissions (tons)	2012 Emissions (tons)	Contingency Reduction Targets¹ (tons)	Contingency Plan Reductions² (tons)
Primary PM _{2.5}	1,042	723	620	46	69
NO _x	68,816	39,468	28,010	4193	7639

¹ Contingency reduction targets represent the average yearly emission reduction expected between the base year and attainment year inventories (i.e., 1/7th of the reduction between 2002 and 2009).

² The contingency plan reductions represent the level of emission reductions expected between 2009 and 2011 from the on-road motor vehicle fleet, assuming emissions decline linearly between 2009 and 2012.

³ Sulfate impacts from Connecticut vehicles traveling near New York City monitors are considered to be insignificant due to Federal fuel sulfur limits that were implemented during the 2002 to 2009 planning period, resulting in sulfur reductions of 90% for gasoline and 97% for diesel fuel from previous levels.

As shown in Table 9-1, emission reductions provided by Connecticut's contingency plan (i.e., 69 tons of primary PM_{2.5} and 7639 tons of NO_x) exceed the required emission reduction targets (i.e., 46 tons of primary PM_{2.5} and 4193 tons of NO_x), thereby satisfying contingency plan requirements. As a result, CTDEP concludes that any localized impacts caused by emissions from Connecticut vehicles at any remaining violating monitors in New York or New Jersey will continue to decline in the post-2009 period.

9.3 Contingency Measure Weight of Evidence Analysis

The CAA requirement to implement contingency measures in areas that fail to achieve timely attainment is intended to ensure continued PM_{2.5} air quality improvements during the period that SIPs are being updated. EPA's PM_{2.5} Implementation Rule attempts to accomplish that goal by requiring states to develop contingency plans based solely on emission reductions from local sources, as was done for Connecticut in the above calculations. However, as more fully discussed in the PM_{2.5} conceptual description in Chapter 2 of this attainment demonstration, elevated levels of PM_{2.5} in the Northeast are caused by varying combinations of both local and regionally transported emissions. In summer, regional levels of sulfate often contribute 50% or

more of total PM_{2.5} concentrations during peak periods. Although peak periods of PM_{2.5} in winter typically have a larger local emissions component than in summer, regionally transported contributions are still significant. Therefore, in addition to the benefits of local emission reductions, continued improvements in PM_{2.5} air quality can be achieved through reductions in transported emissions from upwind areas.

As noted above, sulfates are the single greatest contributor to the regionally transported component of measured PM_{2.5} concentrations. Power plants are the major emitters of SO₂ emissions, much of which is converted in the atmosphere to sulfates, especially during summer episodes when sulfates can make up the majority of measured PM_{2.5} mass.

EPA's CAIR program is designed to reduce the level of transported sulfates caused by power plants, with Phase 1 of the program due to be implemented in 2010. EPA's CAIR modeling demonstrated that Connecticut is not a significant contributor to the sulfate component of PM_{2.5} levels in any nonattainment state; therefore, Connecticut is not subject to the SO₂ provisions of CAIR. However, New York, New Jersey, Pennsylvania and 22 other states in the eastern U.S. are required to implement the CAIR program for SO₂, which EPA estimates will provide a 44% reduction in power plant SO₂ emissions between 2003 and 2010 in covered states. When the CAIR reductions are considered in conjunction with the mounting reductions due to the federal on-road and non-road engine standards and fuel requirements, significant improvements in transported levels of PM_{2.5} can be expected between 2009 and 2011 and beyond. For example, discussions with New Jersey regarding their draft PM_{2.5} SIP indicate that these measures will produce more than 6,600 tons/year of NO_x reductions and 16,600 tons of SO₂ reductions in 2010, representing a 15% reduction compared to the total of NO_x and SO₂ emissions in New Jersey in the attainment year of 2009. Similar levels of post-2009 reductions can be expected in other states upwind of Connecticut due to the CAIR and federal mobile source measures. As a result, significant improvements in transported levels of PM_{2.5} can be anticipated after 2009 in Connecticut and throughout the Northeast, thus reinforcing the satisfaction of Connecticut's contingency requirements.