

Charlotte, North Carolina Carbon Monoxide Maintenance Plan

Effective Update Date: 05/24/06 (71 FR 14817, 03/24/06)

Background of the Plan: In a March 15, 1991, letter to the EPA Region 4 Administrator, the Governor of North Carolina recommended the area Charlotte be designated as nonattainment for carbon monoxide (CO), as required by section 107(d)(1)(A) of the 1990 CAA (Pub. L. 101-549, 104 Stat. 2399, codified at 42 U.S.C. 7401-7671q1). The National Ambient Air Quality Standard (NAAQS) for CO is 9.5 parts per million (ppm). CO nonattainment areas can be classified as moderate or serious, based on their design values. The Charlotte area was a pre-1990 nonattainment area and was designated by operation of law. However, the Charlotte area was classified as "not classified" because it had a design value of 8.4 ppm (based on 1988 and 1989 data), which is below the 9.5 ppm. The Clean Air Act (CAA) established an attainment date of December 31, 1995, for all moderate CO areas. "Not Classified" areas, such as Charlotte, must attain by November 15, 1995. On November 12, 1991, and December 8, 1994, Region 4 determined the Charlotte submittal, constituted a complete redesignation request under the general completeness criteria of 40 CFR 51, appendix V, sections 2.1 and 2.2. The North Carolina redesignation request demonstrated that the Charlotte area met the five requirements of section 107(d)(3)(E). The Charlotte area was redesignated to attainment on August 2, 1995. On March 23, 2005, North Carolina submitted a state implementation plan (SIP) revision, which provided the second 10-year maintenance plan for the Charlotte, Raleigh-Durham, and Winston-Salem CO maintenance areas. The second 10-year CO maintenance plan updates the original 10-year CO maintenance plan for the next 10-year period, and was submitted pursuant to section 175A(b) of the CAA.

Summary of the Plan: On August 9, 1991, the North Carolina Department of Environment and Natural Resources (NCDENR) submitted a maintenance plan and a request to redesignate the Charlotte area from nonattainment to attainment for CO. The Charlotte CO nonattainment area consists only of Mecklenburg County. Subsequently, NCDENR submitted supplemental material to the Charlotte submittal on October 7, 1994. On March 23, 2005, NCDENR submitted the second 10-year maintenance plan for the Charlotte, Raleigh-Durham, and Winston-Salem Areas to demonstrate continued attainment of the CO NAAQS in those areas through 2015. The SIP revision provided a new CO emission inventory for 2000, which reflects emission controls applicable for those areas, and actual and projected emissions for 2000, 2005, 2010, and 2015. The SIP revision also establishes new motor vehicle emission budgets (MVEBs) for CO for 2015 for the aforementioned areas. The emissions inventory and MVEBs are presented in the updated sections below

Control Measures: Under the pre-amended CAA, EPA approved the North Carolina SIP control strategy for the Charlotte nonattainment area, which demonstrated that the SIP satisfied that the rules and the emission reductions achieved as a result of those rules were enforceable. The control measures due to an inspection and maintenance (I/M) program generates annual CO reductions of about 12 percent. The fleet turnover under the Federal Motor Vehicle Emission Control Program produced annual CO emission reductions of 6 percent. The maintenance plan update for this area contains triggering

mechanisms to determine when contingency measures are needed. The Charlotte contingency plan's primary trigger will be a violation of the CO NAAQS. A secondary trigger will be activated within 30 days of the State finding either: (1) The periodic emissions inventory exceeds the base inventory by 10 percent or more, or (2) a monitored air quality exceedance pattern indicates that an actual CO NAAQS violation may be imminent. A pattern will be deemed to indicate an imminent violation if (a) one exceedance of the standard per year has been monitored at a single monitor for two successive years and those exceedances are at least greater than 20 percent above the standard (i.e., 10.8 ppm or above) or (b) the monitored air quality exceedance pattern otherwise suggests that a CO NAAQS violation is likely. Within 45 days of the trigger, the State will activate the pre-adopted regulations discussed below to become effective at the beginning of the next CO season. When other measures are needed to ensure that a future violation of the CO NAAQS does not occur, the State will complete the adoption process within one year of the secondary trigger. In case of a primary or secondary trigger, NCDENR will implement one or a combination of the following contingency measures: implementing either a 2.7 or 3.1 percent oxygenated fuel program, expanding the I/M program coverage, enhanced I/M, transportation control measures, or employee commute options program. EPA finds that the contingency measures provided in the State submittal meets the requirements of section 175A(d) of the CAA.

Emission Reductions: The State of North Carolina submitted a comprehensive inventory of CO emissions of the Raleigh/Durham and Charlotte areas. The inventory includes emissions from area, stationary, and mobile sources using 1990 as the base year for calculations. The area wide CO emissions inventory for baseline year 1990 was 493.76 tons/day and a projected total of 476.98 tons/day by 2005. The maintenance plan update provided an extension of the emissions inventory through the year 2015 and is provided below.

Charlotte Carbon Monoxide Area –Mecklenburg County Emission Inventory and
Projected CO Emissions (2000-2015)
(Calculations in Tons per Day)

	Area	Non-Road Mobile	On-Road Mobile	Point Source	Total
2000	25.13	40.35	259.88	2.56	327.92
2005	29.35	44.07	211.02	2.49	287.16
2010	32.10	43.50	168.17	2.61	246.38
2015	34.51	43.00	145.05	2.76	225.32

Motor Vehicle Budget Update: The updated MVEB for the Mecklenburg CO maintenance area is 247.64 tons per day.

Federal Register: (60 FR 39298, 09/01/95), Charlotte, North Carolina Carbon Monoxide Maintenance Plan; (71 FR 14831, 03/24/06), North Carolina; Charlotte, Raleigh-Durham, and Winston Salem Areas Second 10-year Maintenance Plan for the Carbon Monoxide National Ambient Air Quality Standard – Proposed Rule; (71 FR 14817, 03/24/06) North Carolina; Charlotte, Raleigh-Durham, and Winston Salem Areas

Second 10-year Maintenance Plan for the Carbon Monoxide National Ambient Air Quality Standard – Final Rule.

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