

10. CONTINGENCY PLAN

The General Preamble and EPA guidance defines the requirements for identification of contingency measures for attainment demonstrations. For attainment demonstrations, contingency measures may reduce emissions of either NO_x, SO₂, or PM_{2.5} direct. Contingency measures are required for each milestone year. Air quality plans must include sufficient contingency measures to account for one year of reductions needed to attain.

10.1 Contingency Measures for the Attainment Demonstration

10.1.1 Background

EPA requires the Washington region to include a contingency plan containing adopted measures that qualify as contingency measures for the Attainment Demonstration. This section fulfills the requirement for the Attainment contingency.

10.1.2 Required Reductions

The contingency measures for the attainment demonstration must total one year of reductions needed to attain. The inventory is calculated as described in Sections 3 and 4. Table 10-1 shows the calculation of the necessary reductions.

Table 10-1. PM and PM Precursor Emissions for 2002 and 2009/Contingency Requirement

PM Precursor	PM and PM Precursor Emissions 2002-2009 (tons per year)			
	2002	2009	2002-2009	Contingency Requirement (2002-2009)/7
NO _x	199,594.00	122,172.33	77,421.67	11,060.24
SO ₂	223,328.56	230,161.81	(6,833.25)	None*
PM _{2.5} Direct	25,843.77	25,964.32	(120.55)	None*

* = No contingency measures required because emissions increase between 2002 and 2009.

Contingency reductions must occur on a timetable that is directly related to the Attainment SIP schedule. States have no more than one year after notification by EPA of an attainment failure to achieve the contingency plan reductions. For a potential attainment failure, notification would be received in 2010, therefore the contingency reductions must be achieved no later than 2011.

According to EPA guidance, emission reductions from different PM precursors can be used to meet the required contingency target. EPA has not issued guidance on an acceptable method to assess equivalent reductions for different precursors. The approach taken by the states is to review existing data and sensitivity studies performed as part of photochemical modeling to estimate the relative impact of reductions in different precursors on PM concentrations. Based on an analysis of relative response factors

generated from the CMAQ modeling effort, the SO₄ RRF/NO₃ RRF ratio varies from about 0.94 to about 0.71, implying that 1.06 to 1.4 tons of NO_x equate to the reduction of about 1 ton of SO₂. Another study, by Dr. James Boylan of the Georgia Department of Natural Resources, suggests that 3 tons of NO_x reduction are needed to show equivalency with 1 ton of SO₂. [See Appendix xxx for more details.]

10.1.3 Identified Contingency Measures

Table 10-2 lists the contingency measure identified by the District of Columbia, Maryland and Virginia for the Attainment demonstration. This measure delivers a total benefit of more than 169,000 tons per year (tpy) SO₂ and 657 tpy NO_x. The combined reduction is greater than the required reductions, therefore meeting the contingency measure requirement calculated in Table 10-1. The SO₂ reductions are more than 15 times the required NO_x reduction, and this ratio is significantly higher than all of the equivalency assessments described in Section 10.1.2.

Table 10-2
Contingency Measures for 2008 Reasonable Further Progress (RFP)
(Ozone Season tons per day)

Ref. No.	Contingency Measure	SO ₂ (tons/year)	NO _x (tons/year)
5.4.4	Tier 2 Motor Vehicle Emission Standards	0	657
5.1.1	Regional Transport NO _x Reductions (Clean Air Interstate Rule, Healthy Air Act)	169,154	0
TOTAL REDUCTIONS		169,154	657

In accordance with EPA’s guidance encouraging early implementation of contingency measures to guard against failure to either meet a milestone or attain, the District of Columbia, Maryland and Virginia will implement the contingency measures identified in Table 10-2 according to the timetable indicated in Chapters 5 and 8. EPA’s guidance on early implementation of control measures is as follows:

The EPA encourages the early implementation of required control measures and of contingency measures as a means of guarding against failures to meet a milestone or to attain. Any implemented measures (that are not needed for the rate-of-progress requirements or for the attainment requirements) would need to be backfilled only to the extent they are used to meet a milestone.

The reductions from the designated contingency measures are surplus vis-à-vis the Attainment demonstration contained in this SIP. They will not be used to meet that milestone requirement. As a result, the states will not be required to backfill any contingency measures that they choose to implement in advance of the requirement.

10.1.4 Tier 2 Motor Vehicle Emission Regulations

The U.S. EPA promulgated a rule on February 10, 2000 requiring more stringent tailpipe emissions standards for all passenger vehicles, including sport utility vehicles (SUVs), minivans, vans and pick-up trucks. These regulations also require lower levels of sulfur in gasoline, which will ensure the effectiveness of low emission-control technologies in vehicles and reduce harmful air pollution.

Source Type Affected

These federally implemented programs affect light-duty vehicles and trucks.

Control Strategy

The new tailpipe and sulfur standards require passenger vehicles to be 77% to 95% cleaner than those built before the rule was promulgated and will reduce the sulfur content of gasoline by up to 90 %. The new tailpipe standards are set at an average standard of 0.07 grams per mile for NO_x for all classes of passenger vehicles beginning in 2004. This includes all light-duty trucks, as well as the largest SUVs. Vehicles weighing less than 6000 pounds will be phased-in to this standard between 2004 and 2007.

Beginning in 2004, the refiners and importers of gasoline have the flexibility to manufacture gasoline with a range of sulfur levels as long as all of their production is capped at 300 parts per million (ppm) and their annual corporate average sulfur levels are 120 ppm. In 2005, the refinery average was set at 30 ppm, with a corporate average of 90 ppm and a cap of 300 ppm. Finally, in 2006, refiners met a 30 ppm average sulfur level with a maximum cap of 80 ppm.

As newer, cleaner cars enter the national fleet, the new tailpipe standards will significantly reduce emissions of nitrogen oxides from vehicles by about 74 % by 2030.

Implementation

EPA implements this program under 40 CFR Parts 80, 85, and 86.

Projected Reductions

This measure provides 657 tpy NO_x reduction applied for contingency purposes. This contingency measure will be implemented via a 2010 mobile source budget as discussed in Chapter 7.

Emission Benefit Calculations

The contingency reductions are based on Tier 2 motor vehicle emission standards, for reductions occurring between 2009 and 2010.

10.1.5 Clean Air Interstate Rule/Healthy Air Act Requirements

This section documents contingency credit for SO₂ emissions reductions attributable to federal and regional SO₂ requirements on point sources. These credits include:

- EPA's Clean Air Interstate Rule (CAIR); and
- Maryland's Healthy Air Act.

Control Strategy

Clean Air Interstate Rule (CAIR)

In 2004, the U.S. EPA promulgated the Clean Air Interstate Rule, which requires reductions in emissions of NO_x and SO₂ from large fossil fuel-fired electric generating units. The rule is set up in several phases with the first phase of NO_x reductions to come by 2009 and SO₂ reduction to come in 2010. The rule sets up both an annual emissions budget and an ozone season emissions budget. The rule requires that units with nameplate capacity greater than 25 megawatts emit no more NO_x or SO₂ than their allocations determined by the state either through emission controls or banking and trading.

Virginia CAIR

Virginia has adopted state regulations codifying the requirements of the Clean Air Interstate Rule. Virginia's rules create an emissions cap based on the allowances allocated to the facility. The rules do not allow trading as a method of complying with the emissions cap.

Maryland Healthy Air Act

In April of 2006 the Maryland General Assembly and Governor Ehrlich adopted the Healthy Air Act (HAA), a law that requires reductions in NO_x, SO₂, and Mercury emissions from Maryland's largest and oldest coal fired power plants. Maryland implements the HAA through regulation. The regulation requires reductions in NO_x emissions from coal-fired electric generating units (excluding fluidized bed combustion units) starting in 2009. By 2009 Maryland expects an approximate 70 percent reduction in NO_x emissions from these regulations when compared to 2002 emissions. By 2010 Maryland expects an approximate 70 percent reduction in SO₂ emissions from these regulations when compared to 2002 emissions. To meet the requirements of Maryland's regulations a company's "system" (covered units owned by the same company) must meet a system-wide cap by 2009. Compliance cannot be achieved through the purchase of allowances under the HAA.

District of Columbia CAIR

The District of Columbia is currently drafting its Clean Air Interstate Rule (CAIR). The District of Columbia's CAIR regulations do not allow trading of NO_x or SO₂ allowances for achieving the reductions for the facilities within its jurisdiction.

Summary

The point source NO_x and SO₂ controls are a phased approach to controlling emissions from power plants and other large fuel combustion sources. The programs resulting in

emission reductions applied for contingency from point sources in the region include:
EPA's Clean Air Interstate Rule and Maryland's Healthy Air Act

Implementation

District Department of the Environment
Maryland - Air and Radiation Management Administration
Virginia - Department of Environmental Quality

Projected Reductions

SO₂ Emission Reductions (tons per year)				
	District of Columbia	Maryland	Virginia	Total
SO ₂ Reductions	-	158,354	10,800	169,154

Emission Benefit Calculations

The emission reductions associated with the state SO₂ requirements on point sources were supplied by the staffs of the Maryland Air and Radiation Management Administration, the District Department of the Environment, and the Virginia Department of Environmental Quality Air Division, for reductions occurring between 2009 and 2011.

References

1990 Clean Air Act Amendments, 42 U.S.C. §§7513