Outline - Reasonable Further Progress Plan[1]

(2008 Ozone NAAQS)

Need for RFP Plan

The Metropolitan Washington, DC-MD-VA region is currently classified as Marginal nonattainment area for the 2008 8-hour ozone standard. In case the region is not able to attain the standard by 2015, it will be reclassified as Moderate nonattainment area by EPA. One of the requirements for the Moderate nonattainment area is the submission of a Reasonable Further Progress (RFP) plan. State air agencies have decided to develop a RFP plan in advance in anticipation of a possible reclassification (bump-up) to the Moderate designation.

RFP Plan Submission Deadline

The plan needs to be submitted shortly after redesignation to the moderate classification (due from EPA latest by June 30, 2016).

RFP Plan Components

A. RFP Milestone Years & Emissions Reduction Requirements

- Base Year: 2011 (alternate base year allowed with justification)
- RFP Emissions Reduction Period (6 Years): 2011 – 2017 (assuming 2011 as base year)
- RFP Emissions Reduction Requirements: 15% VOC emission reduction from base year during 2011 – 2017
    - In case of a pre-2011 base year, EPA's draft 2008 Ozone NAAQS implementation guidance is proposing a 3 percent emissions reduction each year after the initial 6-year period has concluded up to the beginning of the attainment year. For example, if 2007 is chosen as a baseline year for a Moderate area, the 15 percent reductions cover the period from January 1, 2008 to December 31, 2013. The area would need to generate an additional 3 percent emissions reduction per year for the years 2014, 2015, 2016, and 2017.
- NOx Substitution: NOx can be substituted for VOC to achieve a total of 15% reduction. (e.g., 10% VOC reduction & 5% NOx reduction).
    - Since the Washington region previously met its 15% VOC emission reduction requirements for RFP purposes under the 1-hour standard, EPA's proposed guidance allows this substitution.

B. Identification of Control Measures to Meet RFP Requirements & Restrictions on Control Measures

Control measures would need to be identified in case existing measures fail to provide enough emissions benefits to meet RFP requirements. However, there are a few restrictions on the control measures that can be employed to meet these requirements. These restrictions are described below.

a) The Clean Air Act Amendments (CAAA) included restrictions on the use of four federal and state control measures to meet the 15% emissions reduction requirements. Following are the four non-creditable emissions control measures:

[1] The outline of the proposed RFP plan is based on EPA's draft 2008 Ozone NAAQS implementation guidance (Federal Register Vol. 78, No. 109, June 6, 2013) and may change when the guidance is finalized.

i. Federal Motor Vehicle Control Program (FMVCP) tailpipe and evaporative standards applicable as of January 1, 1990,
ii. Federal regulations limiting the Reid Vapor Pressure (RVP) of gasoline in ozone nonattainment areas applicable as of June 15, 1990;
iii. State regulations correcting deficiencies in reasonably available control technology (RACT) rules
iv. State regulations establishing or correcting inspection and maintenance (I/M) programs for on-road vehicles.

b) Additional Restrictions
- Emission reductions must be from sources located within the nonattainment area
- Emissions reductions must be enforceable, quantifiable, permanent and surplus

C. Calculation of RFP Emissions Target Levels for 2017

The basic procedures of developing target levels for the 15% Plan are described in EPA's guidance on the *Adjusted Base Year Emissions Inventory and the 1996 Target for the 15% Rate of Progress Plans*. An updated guidance is provided in the Appendix C to Preamble titled "*Methods to Account for Non-Creditable Reductions When Calculating RFP Targets for the 2008 Ozone NAAQS*" of EPA's proposed guidance.

Following are the steps involved in the calculation of emissions target levels for the 15 percent milestone year 2017 to meet the 15 percent emission reduction requirement for RFP.

Step 1 Develop RFP Base Year 2011 Inventories

Calculate actual 2011 base year anthropogenic emissions inventory for VOC and NOx with all 2011 control programs in place.

Step 2 Calculate Non-Creditable Emissions Reduction for 2011-2017

A. Calculation of non-creditable emissions reduction not required

With the exception of the first non-creditable emission control measures listed above, reductions from the rest three measures were achieved many years ago, so the question of creditability is moot for RFP credit. For the motor vehicle standards, a small amount of reduction is still occurring due to fleet turnover. EPA is proposing as one alternative to eliminate the obligation for states to continue to perform this calculation because these reductions are now very small and will continue to further decrease in future years.

B. Calculation of non-creditable emissions reduction required

In case the calculation of non-creditable emission reductions are required in the final rule, then it will performed as described below based on the Appendix C to Preamble of EPA's guidance.

Step 2a Develop Adjusted Base Year 2011 and Adjusted 15% Milestone Year 2017 Inventories

Develop 2011 and 2017 VOC and NOx emissions inventories with the following options:

a) 1990 I/M Program
b) RVP = 7.8 psi (RVP required according to June 1990 fuel RVP regulations)[2]

[2] The 1990 Phase II regulations specify 7.8 psi as the maximum RVP of gasoline being sold in the Washington, DC-MD-VA ozone nonattainment area in 1992.

c) No Post-1990 Clean Air Act Measures
d) 2011 Vehicle Activity Inputs
e) 2011 Vehicle Miles Traveled (VMT)

Step 2b Calculate Non-Creditable Emissions Reductions

Non-creditable VOC Emissions Reductions = Adjusted Base Year 2011 VOC emission – Adjusted 15% Milestone Year 2017 VOC emissions (Step 2a)

Non-creditable NOx Emissions Reductions = Adjusted Base Year 2011 NOx emission – Adjusted 15% Milestone Year 2017 NOx emissions (Step 2a)

Step 3 Calculate RFP Adjusted Base Year 2011 Emissions

RFP Adjusted Base Year 2011 VOC emissions = RFP base year 2011 VOC emissions (Step 1) – non-creditable VOC emissions reduction between 2011 and 2017 (Step 2b)

RFP Adjusted Base Year 2011 NOx emissions = RFP base year 2011 NOx emissions (Step 1) – non-creditable NOx emissions reduction between 2011 and 2017 (Step 2b)

Step 4 Calculate 15% Milestone Year 2017 Emissions Target Levels

The target for VOC and NOx emissions in the 15 percent milestone year 2017 needed to meet the 15 percent milestone year RFP requirement is any combination of VOC and NOx emissions which result in a combined total of 15 percent reductions when compared to the adjusted VOC and NOx inventories calculated in Step 4. For example, the target level of VOC emissions in the 15 percent milestone year could be 90 percent of the adjusted VOC inventory calculated in Step 4, which would be a 10 percent reduction. Similarly the target level of NOx emissions could be 95 percent of the adjusted NOx inventory calculated in Step 4, which would be a 5 percent reduction. The actual projected 15 percent milestone year VOC and NOX inventories for all sources with all control measures in place as of the milestone year and including projected 15 percent milestone year growth in activity must be at or lower than the target levels of VOC and NOX emissions.

2017 VOC Target level = (2011 RFP Base year VOC emissions (Step 1) – non-creditable VOC emissions reduction between 2011 and 2017) * 0.90 (10% VOC reduction)

2017 NOx Target level = (2011 RFP Base year NOx emissions (Step 1) – non-creditable NOx emissions reduction between 2011 and 2017) * 0.95 (5% NOx reduction)

Step 5 RFP Emissions Target Levels for 15% Milestone Year 2017

In order to demonstrate RFP for the period 2011-2017, the Washington region must show that expected emissions in 2017 are equal to or less than the 2017 target levels.

RFP Contingency Emissions Reduction Requirements

A total of 3% reduction using a combination of VOC and NOx reductions are needed to comply with the RFP contingency emissions reduction requirements; however, a minimum of 0.3% VOC is required. Therefore, minimum reduction requirements are as follows:

VOC Reduction Required = (2011 RFP Base Year VOC emissions – non-creditable emissions reduction between 2002 and 2008)* (0.3% VOC reduction)

NOx Reduction Required = (2011 RFP Base Year NOx emissions – non-creditable emissions reduction between 2002 and 2008)* (2.7% NOx reduction)

If an area is required to attain the 2008 ozone NAAQS in 2018 and the SIP includes VOC and NOx emissions reductions resulting from on-road fleet turnover as a contingency measure in the event that the area fails to attain by 2018, the SIP for that area should include VOC and NOx MVEBs for 2019 (the year after the attainment date) that are consistent with the use of the on-road fleet turnover contingency measure. Having such budgets would help to ensure that reductions from a fleet turnover contingency measure would be surplus and available for the SIP in the event that contingency measures are triggered.

Alternative Approaches for Meeting RFP Requirements

A. Air quality-based approach that would measure RFP in terms of actual ambient air quality improvements tied to an area's percent emission reduction requirements. Such an approach would involve work on the part of the state to translate an area's RFP emissions reduction targets (tons) into ozone improvement targets (ppb) based on air quality modeling or other appropriate analyses. The emission reduction targets for the area should be expressed in terms of the pollutant (VOC or NOx) which, when reduced, is most effective in reducing ozone concentrations in the area. Under this approach, RFP milestones would be satisfied if the area implements the target emissions reduction strategies and achieves the targeted ozone air quality improvement over the relevant RFP assessment period. This approach would retain a state's accountability for making consistent incremental progress while focusing on the most direct measurement of improvement, namely air quality.

B. Adjust (or ''weight'') the amount of RFP credit given for reductions of individual species (or similar groups) of VOCs based on their ozone forming potential (i.e., photochemical reactivity). Accordingly, reductions of VOCs with relatively high photochemical reactivity would be given more credit toward RFP requirements and reductions of VOCs with relatively low photochemical reactivity would be given less credit toward those requirements. For example, reducing one ton of a highly reactive VOC (i.e., with 1.5 times the ozone forming potential of an average VOC) could be given a RFP credit of 1.5 tons, reducing one ton of a low reactive VOC (i.e., with 0.5 times the ozone forming potential of an average VOC) could be given a RFP credit of 0.5 tons, and reducing one ton of a VOC with average reactivity could be given a RFP credit of 1.0 tons. Such an approach provides an incentive for states to target those VOC reductions that will have the greatest impact on actual ozone formation. In order to use this approach, the EPA and/or states would need to develop more detailed operational parameters, guidelines or rules derived from scientific assessment.