MEMORANDUM

TO: MWAQC TAC

FROM: Jeff King, COG DEP

DATE: November 29, 2005

SUBJECT: Criteria for Determining Reasonably Available Control Measures

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This memorandum presents proposed criteria for evaluating Reasonably Available Control Measures for the 8-hour Ozone SIP.

Background

EPA regulations require that the region evaluate reasonably available measures to determine whether it is feasible to advance the attainment date. Based on direction from EPA (see attached), the region should first conduct a limited evaluation of measures that does not include detailed attainment modeling. The limited analysis should provide:

- review of available reasonable measures
- estimate of potential emissions reductions
- evaluation of the time needed to implement these measures
- evaluation of anticipated levels of regional controls affecting ozone in the nonattainment area

Proposed RACM Criteria

Below are proposed draft criteria for performing such an evaluation.

- Will reduce emissions by the beginning of the Washington region's 2008 ozone season (May 1, 2008)
- Enforceable
- Technically feasible
- Economically feasible (proposed as a cost of $8,000-$12,000 per ton or less)
- Would not create substantial or widespread adverse impacts within the region
- Emissions from the source being controlled exceed a de minimis threshold, proposed as 0.1 tons per day

In addition, any RACM measures, as a group, must meet the following criteria:

- Measures will enable the region to reduce ozone levels to 85 ppb during the 2008 ozone season (i.e., advance the attainment date by one year)
- Measures can be implemented without an intensive or costly effort

An explanation of these criteria is given in succeeding sections.

Implementation Date

EPA has traditionally instructed regions to evaluate RACM measures on their ability to advance the region's attainment date. This means that implementation of a measure or a group of measures must enable the region to reduce ozone levels to the 84 ppb required to attain the eight-hour ozone standard at least one year earlier than expected. As the Washington region currently expects to reduce ozone levels to 84 ppb during the 2009 ozone season, any RACM measures must enable the region to meet the 84 ppb standard by May 1, 2008, the beginning of the 2008 ozone season.

Enforceability

When a control measure is added to a SIP, the measure becomes legally binding, as are any specific performance targets associated with the measure. If the state or local government does not have the authority necessary to implement or enforce a measure, the measure is not creditable in the SIP and therefore cannot be declared a RACM. A measure is considered enforceable when all state or local government agencies responsible for funding, implementation and enforcement of the measure have committed in writing to its implementation and enforcement.

In addition to theoretical enforceability, a measure must also be practically enforceable. If a measure cannot practically be enforced because the sources are unidentifiable or cannot be located, or because it is otherwise impossible to ensure that the sources will implement the control measure, the measure cannot be declared a RACM. One exception is voluntary measures, such as those implemented under EPA's Voluntary Measures Guidance.

Technological Feasibility

All technology-based control measures must include technologies that have been verified by EPA. The region cannot take SIP credit for technologies that do not produce EPA-verified reductions.

Economic Feasibility and Cost Effectiveness

EPA guidance states that regions should consider both economic feasibility and cost of control when evaluating potential RACM measures. Therefore, the Washington region has specified a cost-effectiveness threshold for all possible RACM measures. Measures for which the cost of compliance exceeds this threshold will not be considered RACM.

In setting this threshold, the region took into consideration two major factors. First, EPA has issued guidance regarding the relationship between RACT and RACM. In its RACM analysis for the Dallas/Forth Worth nonattainment area, EPA states:

"RACT is defined by EPA as the lowest emission rate achievable considering economic and technical feasibility. RACT level control is generally considered RACM for major sources."

In the Washington region, installation of Reasonably Available Control Technology (RACT) costs approximately $8,000 to $10,000 per ton of emissions reduced. Therefore, it seems reasonable to adopt this cost effectiveness for area, nonroad and mobile sources in addition to stationary. Secondly, the National Capital Region Transportation Planning Board (TPB) frequently adopts Transportation Emissions Reduction Measures (TERMs) to offset mobile emissions for the purpose of conformity. The majority of TERMs adopted by TPB in the past ten years for the express purpose of reducing mobile emissions have cost less than $10,000 per ton.[1]

In order to avoid excluding otherwise worthy measures that slightly exceed the cost effectiveness threshold, staff is proposing a threshold of $10,000-$12,000 for cost effectiveness. All measures costing under $12,000 per ton NOx or VOC reduced will be evaluated against the remaining criteria to determine whether they meet the requirements for a RACM measure.

Substantial and Widespread Adverse Impacts

Some candidate RACM measures have the potential to cause substantial and widespread adverse impacts to a particular social group or sector of the economy. Due to environmental justice concerns, measures that cause substantial or widespread adverse impacts will not be considered RACM.

***De Minimis* Threshold**

In the General Preamble, EPA allows regions to exclude from the RACM analysis measures that control emissions from insignificant sources and measures that would impose an undue administrative burden. Under moderate area RACT requirements, the smallest major source subject to RACT emits 25 tpy, or approximately 0.1 tpd. Following these requirements and the precedent set by the San Francisco RACM analysis, the region will not consider control measures affecting source categories that produce less that 0.1 tpd NOx or VOC emissions.

[1] Though several expensive TERMS have been adopted in recent years, these measures were designed for congestion mitigation or other transportation purposes. Emission reductions were credited as an ancillary benefit, and the projects would have proceeded even if no emission credits were generated.

Attachment
Background on EPA RACM Guidance

Below are excerpts from EPA Phase II Guidance (Nov 2005) and the 1990 Clean Air Act Amendments:

> State Implementation Plans must provide for implementation of all reasonably available control measures (RACM) as expeditiously as practicable, insofar as necessary to assure reasonable further progress and attainment by the required date. . . The EPA....indicated that where measures that might in fact be available for implementation in the nonattainment area could not be implemented on a schedule that would advance the date for attainment in the area, EPA would not consider it reasonable to require implementation of such measures. The EPA continues to take this interpretation of the RACM requirement. (Nov 2005)

> As States implement the RACM provisions in conjunction with their attainment demonstration, we recognize that for some moderate areas and some subpart 1 areas, it may be difficult to demonstrate attainment in less than 5 years due to the time needed to adopt and implement controls, and the need to achieve significant emissions reductions to advance the attainment date. However, the State will need to assess RACM to determine whether the attainment date could be sooner than 5 years from designation for each nonattainment area. (Nov 2005)

> If it can be shown that one or more measures are unreasonable because emissions from the sources affected are insignificant (i.e., de minimis), those measures may be excluded from further consideration…the resulting available control measures should then be evaluated for reasonableness, considering their technological feasibility and the cost of control in the area to which the SIP applies…In the case of public sector sources and control measures, this evaluation should consider the impact of the reasonableness of the measures on the municipal or other government entity that must bear the responsibility for their implementation. (1990 CAAA)

> EPA believes that while areas projected to attain within 5 years of designation as a result of existing national measures should still be required to conduct a RACM analysis, such areas may be able to conduct a limited RACM analysis that does not involve additional air quality modeling beyond that used for the attainment demonstration. A limited analysis of this type could involve the review of available reasonable measures, the estimation of potential emissions reductions, the evaluation of the time needed to implement these measures, and anticipated levels of regional controls affecting ozone in the nonattainment area. In lieu of conducting air quality modeling to assess the impact of potential RACM measures, existing modeling information could be considered in determining the magnitude of emissions reductions that could significantly affect air quality and potentially result in earlier attainment. If the State, in consultation with EPA, determines from this initial, more limited RACM analysis that the area may be able to advance its attainment date through implementation of reasonable measures, then the State must conduct a more detailed RACM analysis, involving air quality modeling analyses, to assess whether it can advance the attainment date. (Nov 2005)