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MEMORANDUM

Subject: Use of Emissions Reductions from Motor Vehicles Operated on Low-Sulfur Gasoline as New Source Review (NSR) Offsets for Tier 2/Gasoline Sulfur Refinery Projects in Nonattainment Areas

From: Bill Harnett, Director
Information Transfer & Program Integration Division

To: Air Division Directors

In December 1999, EPA announced a major program designed to significantly reduce emissions from all new passenger vehicles. The new vehicle emissions standards (known as the "Tier 2 standards") for passenger vehicles will cause them to be 77 to 95 percent cleaner than those on the road today. This program marks the first time that sports utility vehicles and other light-duty trucks are subject to the same national pollution standards as cars. And, for the first time, EPA's program treats vehicles and fuels together as a system. To ensure the effectiveness of the low emissions-control technologies on these vehicles, EPA also is requiring refineries to lower the sulfur content in gasoline by approximately 90 percent. Together, these new requirements make up the Tier 2/Sulfur program. The requirements and a full explanation of them can be found in the Federal Register (volume 65, no. 28) dated February 10, 2000, beginning on page 6698.

In order to meet EPA's gasoline sulfur requirements, most refiners are required to meet a gasoline sulfur standard of 120 parts per million (ppm) as averaged over their entire corporate gasoline pool, and a per-gallon cap of 300 ppm, beginning in 2004. In 2005, most refiners must meet a corporate pool average gasoline sulfur standard of 90 ppm, and a refinery average of 30 ppm. By 2006, most refiners must meet an 80 ppm per-gallon cap and a 30 ppm refinery average sulfur level. Small refiners and some others are subject to different sets of standards and compliance dates. In order to meet these sulfur-in-gasoline requirements, many refiners will have to make modifications to their existing facilities. We believe that the typical modifications will involve the installation of new desulfurization process units, including new process heaters. In

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addition, some refineries may have to make changes related to sulfur recovery units, amine treatment units, hydrogen production or other processes to address the removal of sulfur. Any of these changes could result in a significant increase in actual emissions of one or more pollutants and therefore require the issuance of major NSR permits--some for refineries located in nonattainment areas--before the necessary changes to the refinery may occur.

One of the prerequisites for a major NSR permit in a nonattainment area is that a new or modified source must offset its proposed emissions increase with sufficient emissions reductions from another source or sources. Some States have expressed concern that most, if not all, of the emissions reductions (particularly for NOx) available from existing stationary sources in nonattainment areas will be needed to reach attainment. Thus, in these nonattainment areas, it may be difficult to find sufficient emissions reductions of the appropriate pollutant from existing stationary sources to satisfy the requirements for emissions offset under the part D nonattainment area NSR permitting program. To help give certainty that offsets would be available to refineries implementing the gasoline sulfur controls, EPA raised the possibility during the Tier 2/Sulfur rulemaking process that such refineries could use some of the emissions reductions resulting from vehicles operated on low sulfur gasoline as NSR offsets. This memorandum explains EPA's final position that emissions reductions resulting from motor vehicles operated on low sulfur gasoline are acceptable, under certain conditions, for satisfying the NSR emissions offsets requirement. For example, Tier 2/Sulfur emissions reductions of NOx may be used to offset NOx emissions increases from refineries undergoing major modifications in ozone nonattainment areas to comply with the Tier 2/Sulfur requirements so long as the reductions meet the creditability criteria for NSR offsets.

In general, any emissions reduction that is to be used as an emissions reduction credit must be surplus, quantifiable, enforceable and permanent. Specific criteria for offsets, which either clarify or add to the general creditability criteria, are contained in the Clean Air Act under section 173 (in part D of the Act), as follows:

1. The emissions reduction must be federally enforceable. [CAA sec. 173(a)]
2. The emissions reduction must be in effect by the time the

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new/modified source commences operation. [CAA sec. 173(a)(1)(A)]

3. The emissions reduction must ensure that new emissions increases will not interfere with attainment of the national ambient air quality standards. [CAA sec. 173(c)(1)]

4. The emissions reduction must be an actual emissions reduction of the pollutant for which an increase will occur. [CAA sec. 173(c)(1)]

5. The emissions reduction generally must be located in the same nonattainment area as the source needing offsets. [CAA sec. 173(c)(1)]

6. The emissions reduction must be in sufficient amount to satisfy the applicable offset ratio. [CAA sec. 173(c)(1)]

7. The emissions reduction must not be otherwise required under the Act. [CAA sec. 173(c)(2)]

In order to provide the necessary assurance to States, who may want to use some of the Tier 2/Sulfur emissions reductions to offset emissions increases from refineries in nonattainment areas, EPA is setting forth in the attachment to this memorandum its explanation of how States can use the Tier 2/Sulfur emissions reductions in a manner consistent with the statutory criteria for creditable emissions offsets. However, the use of any portion of the Tier 2/Sulfur emissions reductions as NSR offsets is contingent upon a decision by the applicable State or local air agency to dedicate the reductions for that particular purpose. This guidance does not guarantee the availability of any amount of Tier 2/Sulfur emissions reductions specifically for NSR offsets, nor is it intended to mandate that States use Tier 2/Sulfur emissions reductions as offsets.

The guidance contained in this memorandum and attachment sets forth EPA's legal interpretation on the creditability of Tier 2/Sulfur emissions reductions as NSR offsets. This guidance does not supercede existing Federal or State regulations or approved SIP's. The policies set out in this guidance do not represent final Agency action, and are intended as guidance only. This guidance is not ripe for judicial review. Moreover, it is not intended, nor can it be relied upon, to create any rights enforceable by any party in litigation with the United States. State and local agency officials may decide to follow the guidance provided in this memorandum and

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attachment, or to act at variance with the guidance, based on an analysis of specific circumstances. The EPA may change this guidance at any time without public notice.

Finally, we are asking EPA Regional Offices to promptly send this memorandum and attachment to State and local permitting agencies within their jurisdiction. Questions concerning the application of this guidance to specific implementation plans and mobile source emissions inventories should be directed toward the appropriate Regional Office. Regional Office staff may contact Dan deRoeck of the Integrated Implementation Group at 919/541-5593, if they have any questions.

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ATTACHMENT

**Description of EPA's Position Concerning the Use of Tier 2/Sulfur
Emissions Reductions in a Manner Consistent With the
Clean Air Act Requirements for New Source Review Offsets**

1.a. How can States use the Tier 2/Sulfur emissions reductions as offsets without interfering with the attainment of the national ambient air quality standards?

The purpose of an emissions offset is to ensure that the increase in emissions in a nonattainment area resulting from a new or modified major stationary source does not interfere with either (a) the progress being provided by the annual reductions identified by the State to reach attainment, or (b) attainment by the attainment date. Therefore, it makes sense that emissions reductions used to offset a proposed emissions increase cannot also be credited toward either RFP or the attainment demonstration. This would constitute double counting, i.e., treating the amount of motor vehicle emissions as not being in the air for attainment planning purposes while at the same time allowing the emissions to be in the air through construction of the modified refinery using that amount of emissions as an NSR offset. Such double counting is prohibited under the Clean Air Act. See e.g., 40 CFR § 51.156(a)(3)(G).

States have flexibility in deciding how to distribute the Tier 2/Sulfur emissions reductions of NO_x that will occur in a particular nonattainment area. For example, a State that decides to use all of the Tier 2/Sulfur emissions reductions of NO_x to demonstrate RFP or attainment will have to find additional NO_x emissions reductions elsewhere for offsets or require that the proposed source or modification identify the required NO_x offsets on their own. Alternatively, States choosing to use a portion of their Tier 2/Sulfur emissions reductions as offsets must avoid double counting those reductions by explicitly identifying the amount of NO_x emissions reductions that it will set aside as offsets.

b. How should Tier 2/Sulfur emissions reductions and their use as offsets be reflected in the SIP's motor vehicle emissions budgets?

SIPs that are currently being developed and submitted must include the effects of the Tier 2/Sulfur rule when estimating the

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future on-road mobile inventory. This on-road mobile inventory will generally become the motor vehicle emissions budgets for conformity purposes. One potential exception is the case where not all of the Tier 2/Sulfur emissions reductions are necessary for attainment or reasonable further progress, and the State chooses to increase the motor vehicle emissions budgets in order to allow growth in mobile sources above what the SIP currently expects. In this case, the amount by which the budgets are increased would not be available for use as offsets. In order to prevent double counting, States that want to provide for offsets would need to identify the amount of emissions reduction being set aside for offsets and confirm that the emissions reductions have not been assigned to increase the motor vehicle emissions budgets.

Some SIPs that were submitted before the final Tier 2/Sulfur rule do not reflect the effects of the rule in the motor vehicle emissions budgets. In these cases, if the State is relying on all or a portion of the Tier 2/Sulfur emissions reductions in order to demonstrate attainment or reasonable further progress, the motor vehicle emissions budgets must be lowered by that amount. Similarly, if the State wants to set aside a portion of the Tier 2/Sulfur emissions reductions for offsets, the motor vehicle emissions budgets must be lowered by that amount in order to prevent double counting. If the State does not lower the motor vehicle emissions budgets in the SIP to reflect the Tier 2/Sulfur emissions reductions, those reductions are being used for conformity purposes and are not available for use as offsets.

2. How can States assure that offsets derived from the Tier 2/Sulfur emissions reductions are federally enforceable?

As described above, each State must account for the amount of Tier 2/Sulfur emissions reductions which it intends to set aside for NSR offsets in the applicable implementation plan. The quantification of the amount and commitment in the plan to use a specified portion of the Tier 2/Sulfur emissions reductions as offsets (thereby removing them from the SIP's motor vehicle emissions budgets) are necessary steps so that the reductions can be considered federally enforceable for offset purposes. In addition, when a State is using the bulk of the Tier 2/Sulfur emissions reductions as offsets it should include contingency measures providing for the acquisition of alternative offsets in the event that the actual emissions reductions from the implementation of the Tier 2/Sulfur program in a given nonattainment

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area fail to meet the amounts projected for the area. EPA will work with any State that requests assistance in quantifying the Tier 2/Sulfur emissions reductions as well developing appropriate contingency measures as may be needed.

3. Can Tier 2/Sulfur emissions reductions be considered "in effect" by the time the new/modified source commences operation?

EPA believes that the Tier 2/Sulfur emissions reductions can be considered in effect relative to the operation date of the refinery, even though in some instances the initial reductions will not occur (at least with respect to the first refinery undergoing modification) until shortly after the refinery's modifications are complete and it has begun producing the low sulfur gasoline. Generally, however, the gasoline produced by a refinery reaches the market within a few weeks of production, and virtually all refineries sell some portion of their gasoline to the local market. Because of these factors, and since the overall amount of emissions reductions from Tier 2 will be very large in relation to the relatively small NOx emissions increases expected from refineries, EPA anticipates that the amount of emissions reductions needed for offset purposes will be generated within a few weeks after the modified refineries begin operating. States would need to confirm this information with any refinery seeking to use such offsets. Thus, the benefits derived from the use of low sulfur gasoline will begin to be experienced within a matter of weeks from the date of production. This, in EPA's view, is an insignificant difference which should not invalidate the use of the reductions as offsets for the affected refinery.

4. Will the Tier 2/Sulfur emissions reductions represent actual NOx emissions reductions?

EPA believes that the implementation of the Tier 2/Sulfur program will result in emissions reductions that are both real (actual) and quantifiable. Quantification of the annual Tier 2/Sulfur emissions reductions (including the ozone season and non-ozone season) in any county or combination of nonattainment counties can be achieved by determining the old (baseline) gasoline sulfur level and the fraction that will be changed by the new low-sulfur gasoline from the proposed refinery changes, as well as the makeup of the vehicle fleet (model year and vehicle type), number of miles driven by the local vehicle fleet, and the effect of gasoline sulfur levels on the emissions factor for each model year-vehicle type combination in the affected

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area.

EPA will soon have available estimates of county-by-county Tier 2/Sulfur emissions reductions for NO_x occurring in the year 2004 and beyond. Those estimates consider both the phasing in of low sulfur gasoline and the introduction of motor vehicles which comply with the Tier 2/Sulfur standards. For emissions reductions occurring before 2004, State should calculate the emissions reductions attributable to the use of low sulfur gasoline in the existing motor vehicle fleet, which would not include vehicles meeting the Tier 2 vehicle emissions standards. Information on the pre-2004 vehicle mix and gasoline sulfur levels should be determined by State and local officials in cooperation with the affected refiners. EPA will respond to requests for assistance by working with the States to make the necessary calculations of motor vehicle emissions reductions.

Tier 2/Sulfur emissions reductions can be calculated on a county-by-county basis for any nonattainment area. Therefore, States may set aside reductions from any county or counties within the same nonattainment area or from counties in other nearby nonattainment areas which meet the statutory conditions for the location of offsets [CAA at sec. 173(c)(1).] In addition, States must take into account the offset ratio applicable to the affected nonattainment area in order to accurately determine the amount of offset needed.

5. Are the Tier 2/Sulfur emissions reductions otherwise required by the Act?

No, both the Tier 2 vehicle emissions standards and sulfur-in-gasoline limits are considered to be based on findings that involved the Administrator's discretion. Thus, since the statute did not mandate that EPA promulgate Tier 2/sulfur control regulations, emissions reductions resulting from either the vehicle emissions standards or the gasoline sulfur limits are considered to be "not otherwise required" within the meaning of section 173(c)(2) of the Act, in contrast to, e.g., reasonably available control technology (RACT) requirements under Part D of Title I, which are mandatory and thus "otherwise required." EPA adopted the Tier 2 motor vehicle emissions standards under the authority of section 202(i) of the Act, which authorizes EPA to study whether further emissions reductions beyond the reductions already required by the Act from light-duty vehicles and light-duty trucks should be required. While the study itself was required by the Act, EPA exercised considerable discretion

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in arriving at the conclusions which lead the Agency to establish the Tier 2 motor vehicle emissions standards. Also, EPA adopted the sulfur controls pursuant to its discretionary authority under Section 211(c)(1) of the Act to adopt controls or prohibitions on the manufacture, introduction into commerce, offering for sale, or sale of a fuel or fuel additive if, in the Administrator's judgment, (1) any emissions product of the fuel or additive causes or contributes to air pollution which may reasonably be anticipated to endanger public health or welfare, or (2) emissions products of the fuel or additive will impair to a significant degree the performance of an emissions control device or system which is in general use, or which the Administrator finds would be in general use in a reasonable time if the fuel control is adopted. EPA exercised its discretion to adopt gasoline sulfur controls based on both of these findings under Section 211(c)(1) of the Act.

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