

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Office of Air Quality Planning and Standards  
Research Triangle Park, North Carolina 27711

August 24, 1989

## MEMORANDUM

**SUBJECT:** Guidance on Implementing the Nitrogen Dioxide (NO<sub>2</sub>) Prevention of Significant Deterioration (PSD) Increments

**FROM:** John Calcagni, Director  
Air Quality Management Division (MD-15)

**TO:** William B. Hathaway, Director  
Air, Pesticides, and Toxics Division, Region VI

This memorandum is in response to your request for guidance on meeting the requirements of the NO<sub>2</sub> PSD increments regulation. General points are discussed below, while the specific questions you posed in your memorandum are listed in the attachment, followed by our responses.

We believe that promulgation of the NO<sub>2</sub> increments regulation creates some new, but manageable, aspects of the PSD program. Studies show that excessive NO<sub>2</sub> increment consumption on an area-wide basis, particularly for Class II areas, should not be a problem for many years. Thus, there should be time available for most States to develop the programs needed to address NO<sub>2</sub> increments before potential problems arise. While considerable guidance exists to implement the NO<sub>2</sub> increments, the additional guidance needed to prepare State implementation plan (SIP) and delegation agreement revisions is under development and scheduled for completion within the next few months.

More specifically, guidance is now being developed which outlines the necessary revisions to SIP's (and delegation agreements) that States need to make to have approvable SIP's. This guidance will be distributed in memorandum form to Regional Offices and incorporated into the New Source Review (NSR) Guidance Manual (which is currently being updated). A technical procedures document is also being developed which will provide a step-by-step description of how to develop an emissions inventory and gather the information needed to model mobile source and area emissions. It will also contain examples of NO<sub>2</sub> increment consumption analyses.

One aspect of the NO<sub>2</sub> increment program that does need some attention is the fact that NO<sub>2</sub> increment consumption began with the date of the proposal of the NO<sub>2</sub> increments (February 8, 1988). Since State programs to implement the NO<sub>2</sub> increments are not required to be in place until November 17, 1990, there is a possibility that some major NO<sub>2</sub> sources that would violate the NO<sub>2</sub> increments would submit a permit application before the State NO<sub>2</sub> increments regulations are in effect. While we do not believe that many such situations will occur, especially in Class II areas, the situation has already occurred

in Region II and may arise elsewhere. We pointed this potential situation out in the preamble of the regulations and suggested that States require NO<sub>2</sub> increment consumption analysis as soon as possible. Since major sources of NO<sub>2</sub> are already required to perform a NAAQS analysis, this may provide much of the data base which will be needed to determine how much increment has already been consumed.

Various actions should be considered by the State or by EPA if it is determined that a proposed new source will violate an NO<sub>2</sub> increment before the State's NO<sub>2</sub> increments regulations are in effect. There is no need for the permitting agency to be blind to a future violation. Therefore, if a source will be in violation of an NO<sub>2</sub> increment once the revised SIP or delegation agreement is approved, the Regions should call upon the State to indicate how the violation will be cured. A notice in the permit to the effect that the source may later be required to reduce its NO<sub>x</sub> emissions might also be prudent. An individual source which could cause or contribute to NO<sub>2</sub> increment exceedances should at the very least be forewarned that further emissions reductions may be required (once the NO<sub>2</sub> increment rules are effective) to avoid such exceedances.

To minimize any potential impact of the time lag, the promulgated NO<sub>2</sub> regulations allow States to obtain SIP approval as early as October 1989. A similar procedure is also available for States with delegated authority to do likewise. This procedure was outlined in a memorandum entitled "Guidance on Early Delegation of Authority for the NO<sub>2</sub> Increments Program," dated February 15, 1989. You are encouraged to explore early delegation or SIP submittals with your States. In fact, the first early delegation we are aware of occurred on August 11 when Region I delegated the NO<sub>2</sub> increment program to New Hampshire (see the attached Federal Register). Lynne Hamjian, the Region I contact, has details on the procedure they used to go direct final on this action.

If there are any questions, please call me at FTS 629-5621 or Gary McCutchen at FTS 629-5592.

#### Attachments

cc: Regional Division Director, Regions I-X  
Chief, State Air Programs Branch, Region I  
Chief, Air Programs Branch, Regions II, III, IV, VI, VIII, IX, and X  
Chief, Air and Radiation Branch, Region V  
Chief, Air Branch, Region VII  
Chief, Air Compliance Branch, Region II  
Chief, Air Enforcement Branch, Regions III, VI  
Chief, Air Operations Branch, Region IX  
NSR Contacts

## ATTACHMENT

### Responses to Questions:

1. Recognizing the lack of regulatory authority at present and [the delayed] effective implementation date, what is the EPA policy and recommended actions for planning and implementation of the NO<sub>2</sub> increment standards between now and November 17, 1990?

Regions are encouraged to begin working with their States to obtain early delegation agreements or approvable SIP's prior to the submittal deadline of July 17, 1990. Later this year we will be providing documents that will give more detailed guidance on a number of specific topics, such as modeling and emissions inventories, but Regions can begin at any time to start working with the States on general agreements. There is one issue that is likely to arise early in your negotiations. In the preamble to the NO<sub>2</sub> increments regulations, EPA recommends that States require all major sources to provide NO<sub>2</sub> increment consumption analyses even before their NO<sub>2</sub> increment programs are in place. This is because NO<sub>2</sub> increment consumption in an area can begin as early as February 8, 1988, and thus may begin before the State's NO<sub>2</sub> increment rules are in effect. Most of the data needed to determine increment consumption should already be available. For example, NO<sub>2</sub> emissions modeling for NAAQS compliance (which is already required for major new sources and major modifications) should provide much of the data needed to determine NO<sub>2</sub> increment consumption. This is because a PSD source must model its new emissions (or emissions increase) to determine the boundaries of its impact area [the area(s) where the impact of

emissions from the proposed source is 1  $\mu\text{g}/\text{m}^3$  NO<sub>2</sub> (annual average) or more]. A source may also need to model to determine whether preconstruction monitoring is required [preconstruction monitoring is not required if ambient air quality impacts are below 14  $\mu\text{g}/\text{m}^3$  NO<sub>2</sub> (annual average)]. Either of these modeling exercises can provide the amount of NO<sub>2</sub> increment the new source or modification will consume. States should ask that these modeling analyses, including the maximum air quality impact, be provided to them in the application. The only data not provided from this modeling would be the increment consumption from other nearby increment-consuming sources. We believe it would be highly unusual for many situations to occur in the first 2-3 years of this program (February 1988 to November 1990) where two or more major NO<sub>2</sub> increment-consuming sources locate close to each other so as to have overlapping impacts. If this does occur, the proposed source will likely have to model emissions from those nearby increment-consuming sources to ascertain compliance with the NO<sub>2</sub> NAAQS (which has always been required in the PSD analysis). This information can be provided with the permit application, at little or no extra cost or effort, to determine increment consumption. States could also request increment consumption data on a voluntary basis or through a section 114 letter. Having sources generate these data now will be less expensive and time-consuming for all concerned than to try to make this determination after the fact.

2. Is the Regional Office responsible for emission inventory and increment analysis for stationary and mobile sources to identify the areas where the increments for NO<sub>2</sub> were exceeded on or before February 8, 1988 (determining the baseline areas)?

First, there was no NO<sub>2</sub> increment consumption before February 8, 1988, the major source baseline date. Second, States, rather than Regional Offices,

are directly responsible, after their revised SIP or delegation agreements are approved, for ensuring that emission inventories are developed and maintained, and for requiring permit applicants to perform NO<sub>2</sub> increment consumption analyses. In the interim, the Regional Offices should encourage their States to obtain increment consumption data or analyses from all major sources. Also, when necessary, they can use Clean Air Act section 114 authority to require major sources to conduct NO<sub>2</sub> increment analyses. They can also delegate this authority to the States.

3. Is it necessary at this time to add a caveat to each PSD permit, issued between February 8, 1988 and November 17, 1990, that would enable the permitting agency in the future to revisit and adjust the NO<sub>2</sub> emission limitations if the NO<sub>2</sub> increments are found to be exceeded in that area (similar to stack height regulations/PSD permits)?

Certainly, adding a caveat to a permit before it is issued, that expressly constitutes a conditional approval, could be very useful in circumstances where the source would cause an increment exceedance. If that were done, the permit itself could be amended, or even rescinded, after the effective date of the increment regulations, if it is determined that the source is located in an area which in fact exceeds the NO<sub>2</sub> increment allowance. A lesser measure would be a caveat advising the source that, while the permit will remain unchanged, the source may be required to reduce emissions at a later date. Such caveats should help get the point across to the applicant that it is prudent to perform a NO<sub>2</sub> increment consumption analysis and inadvisable to build a facility which would cause or contribute to NO<sub>2</sub> increment exceedances. Of course, States will have to cure any NO<sub>2</sub> increment violations within their borders once their revised SIP or delegation agreements are approved, regardless of the terms of a permit. Accordingly, a State can take whatever steps are necessary, even after a permit has been

issued, and even if there are no caveats in the permit, to effect a change in emissions limitations, source configuration, or other requirements applicable to the source in order to cure the increment violation. Issuance of a permit does not free an applicant of the need to meet other requirements and regulations [see section 52.21(r)(3), Approval to Construct]. (In States where the NSR permits program is run by the EPA Region, the Region has the same rights and privileges as a State would have if it were running the program and should consider conditions in the permit, or some other measure, to avoid or correct NO<sub>2</sub> increment violations).

4. Will all affected sources which received PSD permits after February 8, 1988 be subject to re-analysis to determine if any of these sources exceeded the NO<sub>2</sub> increment when the increment standards become effective on November 17, 1990 (SIP approval)?

As explained in the response to question 1, most, if not all of the data needed to determine whether a source will cause or contribute to a violation of an increment should already be available as a result of other required analyses. As such, we do not anticipate that "re-analysis" will be needed in many cases. However, sources could be subject to re-analysis, depending on how the State elects to determine and track NO<sub>2</sub> increment consumption and cure increment violations. Each State must explain in its revised SIP or delegation agreement how it will determine the amount of NO<sub>2</sub> increment already consumed. The State must also describe the process by which any exceedance of the NO<sub>2</sub> increment will be corrected. We do not anticipate many situations, especially in Class II areas, where the NO<sub>2</sub> increments will be exceeded prior to States developing their NO<sub>2</sub> increments programs.

5. Several questions arise which an example may clarify. A PSD permit for NO<sub>x</sub> was issued to a source after February 8, 1988. Later, the permitting agency found that the NO<sub>2</sub> increments were exceeded on or before February 8, 1988. The questions are: a) will the source have a valid permit after November 17, 1990, and b) will this source be required to do an NO<sub>2</sub> increment analysis and potentially be required to reduce its NO<sub>x</sub> emissions to an acceptable level?

As discussed in question 2, NO<sub>2</sub> increment violations could not have occurred prior to February 8, 1988. In response to question (a), sources that are issued permits before the State NO<sub>2</sub> increments requirements are in place will have valid permits, even in those situations where they may cause or contribute to an NO<sub>2</sub> increment violation. However, States are required to take action to remedy increment exceedances, once their revised SIP or delegation agreements are approved. Accordingly, even though a State may not have the authority to revoke or directly revise a permit, it can override or supercede the permit conditions (e.g., a SIP revision), since issuance of a permit does not free an applicant of the need to meet other requirements and regulations [see sect. 52.21(r)(3), Approval to Construct]. Action to correct an increment violation could focus on one large source, on all new sources, or on all sources of that pollutant in that area. The choice of strategy is up to the State, so it could involve revocation of permits (in States with that authority), additional analyses by sources, new control requirements to control emissions, or other measures.

With respect to question (b), the Part 52 NO<sub>2</sub> increments regulations contain a provision that grandfathers permit applications which are already complete on the effective date of the regulation, including those projects with approved permits, from being required by EPA to perform NO<sub>2</sub> increment consumption analyses. It is therefore possible that some sources may be

grandfathered from being required to do the NO<sub>2</sub> increments analysis. Some delegated States have statutes which prohibit rules more stringent than EPA's and may have to accept the EPA grandfathering provision. However, States are not required to include these grandfathering provisions in their SIP regulations, and EPA encouraged them in the preamble of the NO<sub>2</sub> increments regulations not to do so.

6. Can (or should) an agency (between now and November 17, 1990) issue a permit to a source if, in fact, the permitting agency is aware that the NO<sub>2</sub> increments have already been exceeded in the area under consideration?

A permit should not be rejected by either EPA or a State agency solely because the available NO<sub>2</sub> increment has been (or will be) exceeded, until such time as either: 1) the State's revised NO<sub>2</sub> increment SIP or delegation agreement is in effect, or 2) the EPA has taken over responsibility for this facet of the permitting program. However, there is no need for a permitting agency to be blind to a future violation. A State has broad authority to deny or condition a permit, as long as it has some rational basis for doing so, and States with approved PSD programs are free to factor NO<sub>2</sub> increment consumption into the permitting decision. Also, EPA can insist that the State show, as part of the permit review package, how excessive increment consumption or an exceedance will be cured once the increment regulations are effective. In the absence of an explanation of how an exceedance will be cured at a later time, EPA can insist that the State include appropriate conditions in the permit for the new or modified source that could be relied on by the State to alleviate or prevent possible future increment exceedances. As noted in the response to question 3, EPA has the same rights as the States, when it runs the NSR



program, to require a source to show how excessive increment consumption will be cured. Assume, for example, that modeling shows that a proposed new source would cause an NO<sub>2</sub> increment exceedance when the increment becomes effective, and the only way to prevent such an exceedance is to reduce emissions from that source. If such future reductions would entail significant retrofit costs, this would be an adequate basis for requiring a more stringent BACT determination or other permit conditions to reduce the source impact prior to construction. Such conditions represent a valid exercise of the permitting agency authority to manage clean air resources in a manner consistent with the goals and purposes of the PSD program.

7. Can (or should) an agency (between now and 11/17/90) issue a PSD permit to a source if this source (by itself) "causes or contributes" to NO<sub>2</sub> increment exceedances?

See responses to questions 3 and 6.

8. Will the sources that received PSD permits before February 8, 1988 but increased production rate and emissions for NO<sub>x</sub> after February 8, 1988 (but before November 17, 1990) be grandfathered from the NO<sub>2</sub> increments [consumption]? Our concern stems from the fact that there is no mechanism to track consumption from increased production of the industries that had been in an economic downturn until recently. These types of sources can increase their actual emissions up to allowable levels without applying for a permit.

In general, increased emissions from such sources would not be grandfathered. Increases in emissions resulting from increased hours or capacity utilization at sources contributing to baseline concentrations consume increment, since actual emissions are used in increment consumption analyses. However, if a source can demonstrate that its operation after the baseline date is more representative of normal source operation than its operation preceding the baseline date, the more representative period may be

used to calculate the source's actual emission contribution to the baseline concentration. Emission increases of less than 40 tons per year associated with a modification at a major source after February 8, 1988 consume NO<sub>2</sub> increment even if the minor source baseline date has not been triggered, but would not trigger the minor source baseline date (only major new sources or major modifications do that). Increment consumption analyses are not required under PSD for any non-major modifications, but must be taken into account when the next major source conducts an increment consumption analysis.

9. The NO<sub>x</sub> emissions from area sources in several parishes of Louisiana exceed the NO<sub>x</sub> emissions from point sources. How will increment [consumption] from area sources be quantified as of February 8, 1988?

With the exception noted in the previous response, increment consumption by minor sources (which includes area and mobile sources) will not begin until the minor source baseline date is triggered. This does not occur in an area until receipt (after February 8, 1988) of the first complete major source permit application with significant NO<sub>x</sub> emissions. This applicant must determine the baseline ambient air quality for NO<sub>2</sub> from a combination of monitoring and modeling data as of the date of the submittal of the permit application; this level becomes the baseline concentration. Each subsequent major source applicant must calculate the ambient air quality impact of all NO<sub>x</sub> emission changes from major, minor, mobile and area sources since the previous major source permit application. Guidance for States to consider in developing procedures for developing and maintaining inventories of No<sub>x</sub> emissions from major, minor, mobile and area sources are currently under development.

10. The following questions concern source shutdowns:

a. If a source is shut down before the baseline date, will it be subject to the NO<sub>2</sub> increment analysis if it restarts between February 8, 1988 and November 17, 1990?

b. If a source shuts down before the baseline date and then restarts after November 17, 1990, will it be subject to the NO<sub>2</sub> increment analysis?

c. If a source shuts down after the baseline date, but before November 17, 1990 (and restarts after November 17, 1990), will it be subject to the NO<sub>2</sub> increment analysis?

For all of the above cases, a new permit would be needed if the shut down is considered to be permanent under EPA policy (expired or rescinded permit, no longer in inventory, or torn down). In that eventuality, the source "restart" would be considered a new source and an NO<sub>2</sub> increment consumption analysis would be required. If, however, for cases "a" and "b", the "shutdown" was considered temporary (e.g., it remained on the State's emission inventory), EPA would not require the source to do an NO<sub>2</sub> increment consumption analysis, since it is not a new or modified source. When an existing major source shuts down (e.g., no valid operating permit) after the baseline date (February 8, 1988), as in case "c", it expands available increment. When that source is restarted it consumes increment and, at least in those States which have an approved SIP or a delegated program in place, an NO<sub>2</sub> increments analysis would be required.

11. If a source submitted an application before November 17, 1990, and the application was considered complete before that date (assuming the permit will be issued after that date), is this source subject to the NO<sub>2</sub> increment analysis?

Since States can adopt and implement the program prior to November 17, 1990, the answer will vary depending on Federal and State requirements and

when they went into effect. For example, if a State's requirements went into effect on January 1, 1990 and the source submitted its complete permit application on March 1, 1990, it would be subject to the NO<sub>2</sub> increment rules. Sources are required by EPA to submit NO<sub>2</sub> increment consumption analyses for permit applications which are completed after November 17, 1990 or the date the State SIP (or delegation agreement) is approved, whichever is earlier. States may require NO<sub>2</sub> increment consumption analyses prior to approval of their SIP's or delegation agreements, and they are encouraged to do so.

