

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

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4APT-ARB

Dr. Donald R. van der Vaart, Ph.D., P.E.  
Division of Air Quality  
NC Department of Environment  
and Natural Resources  
P.O. Box 29580  
Raleigh, NC 27626-0580

Dear Dr. van der Vaart:

Thank you for sending your letter dated March 7, 2001, requesting an opinion on four questions related to major new source review (NSR) prevention of significant deterioration (PSD) requirements and federal new source performance standards (NSPS). You raised these questions with specific regard to the PPG Industries (PPG) facility in Lexington, North Carolina - a fiberglass production facility. Our response to these questions appears below. In preparing this response, we consulted with the U.S. Environmental Protection Agency's (EPA's) Office of Air Quality Planning and Standards, Office of General Counsel, and Office of Enforcement and Compliance Assurance.

With respect to questions involving PSD, we have responded to your request based on how we believe such a request would be resolved under the federal PSD rules in Title 40 Code of Federal Regulations and under EPA policies. Our response does not represent how the North Carolina Division of Air Quality (NCDAQ) must interpret the PSD requirements that EPA has approved into the North Carolina state implementation plan, nor does it represent final agency action. Instead, this letter provides guidance for you to consider in your role as the PSD permitting authority.

Question #1 - PSD Applicability of a Physical Change

Question #1 relates to installation of an electric boost on furnace 509 occurring in 1980. (Your letter states that the installation date was 1990, but we are led to believe that the actual date is 1980 based on Attachment A of your letter.) The question at issue is expressed in the following excerpts from your letter: "In the past, and in reliance on EPA guidance, the NCDAQ has maintained that once it is concluded that a physical change has taken place, even if that change does not affect the unit's design capacity, utilization, or emission factor for any pollutant that the net emissions increase calculus must be performed to determine if the change is a major modification... The NCDAQ requests a determination as to whether it is proper in this case where a physical change has occurred to avoid

performing an actual-to-potential PSD applicability test based on a claim that the physical change did not result in an emissions increase.”

Your understanding of EPA guidance is correct for projects involving physical changes that are not considered routine changes and that do not involve electric utility steam generating units (for which the actual-to-potential test can be replaced by a different test). Therefore, our opinion is that an actual-to-potential comparison is the proper comparison for the furnace 509 electric boost installation in 1980, provided that this installation occurred after the effective date of the 1980 PSD rule revisions. A further discussion related to our opinion follows next.

There are two considerations related to this question that we consider to be of primary significance. First, installation of electric boost to furnace 509 constituted a physical change of an emissions unit. Second, assessment of whether a physical change (or a change in the method of operation) of an emissions unit produces an emissions increase hinges on changes in *actual* emissions following the physical change (or change in the method of operation). Taking as a given that debottlenecking and/or increased utilization of other emissions units are not involved here, the question becomes whether actual emissions from furnace 509 increased as a result of electric boost installation - not whether potential emissions remained the same (or even decreased).

This concept is expressed in a number of EPA documents. For example, in an enclosure to a letter dated May 23, 2000, from EPA Region 5 to Mr. Henry Nickel, the following discussion appears: “If a physical change or change in the method of operation is not ‘routine,’ it still does not trigger PSD unless it results in a significant net emissions increase. This involves comparing recent pre-change, or ‘baseline,’ actual emissions to a projection of future actual emissions following the change.. For units that are not ‘electric utility steam generating units,’ EPA’s rules require that for units that have ‘not begun normal operations,’ i.e., units that will undertake a non-excluded physical or operational change, the post-change emissions ‘shall equal the potential to emit of the unit,’ which is the ‘maximum capacity of a stationary source to emit a pollutant under its physical and operational design,’ but which also accounts for pollution controls and permit restrictions that limit lawful emissions to a level below the maximum physical capacity.”

Therefore, in the case of an emissions unit (other than an electric utility steam generating unit) with a proposed modification that has not yet taken place, the change in actual emissions is the difference between past actual emissions in tons per year and future potential/allowable emissions in tons per year. Past actual emissions are the average emissions during a two-year period preceding the proposed change, unless the permitting agency agrees that some other period is more representative of normal operation. The source owner has the option of accepting an enforceable restriction on future potential/allowable emissions to minimize or avoid a significant increase in net emissions.

We understand PPG's position on this question to be that the past actual to future potential comparison is not applicable because electric boost installation would not by itself have resulted in an actual emissions increase. Three documents are appended to your letter that have been offered by PPG in support of this position. These documents are two EPA letters (appended as Attachment C to your letter) and a letter from RTP Environmental Associates (appended as Attachment B to your letter)

The two EPA letters address what in effect are pollution reduction projects. The letter from EPA Region 5 dated February 12, 2001, pertains to upgrades of pollution control devices at a cement plant. The letter from EPA Region 5 dated April 6, 1993, focuses on a conversion from one fuel to a lower emitting fuel. We view the contexts of these two letters as different from the installation of an electric boost on a furnace. Electric boost installation does not involve an improvement of a pollution control device or a switch to a cleaner fuel.

The letter from RTP Associates dated February 7, 2001 states that the installation of electric boost did not result in an emissions increase. It further states: "If a source can demonstrate that a project did not *result in* an emissions increase, there is no need to do any type of emissions calculation to determine the amount of emissions increase." These statements rest on the incorrect assumption that PPG could determine whether there was an emissions increase without performing any type of emissions calculation. In reality, PPG cannot determine whether there was an emissions increase unless it compares past actual emissions to future potential emissions since that is the applicable test for an emissions increase.

#### Question #2 - Relaxation of Previous Enforceable Limits

Your second question deals with the "relaxation" provision found in the "source obligation" section of PSD rules. The applicable rule provision at issue [which, for North Carolina, is found in 40 C.F.R. § 51.166(r)(2)] reads in part as follows: "... at such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of paragraphs (j) through (s) of this section shall apply to the source or modification as though construction had not yet commenced on the source or modification."

You indicate that a source owner might interpret the "solely by virtue of" regulatory language as a way to avoid the relaxation provision when a project involves a modification that prompts a request for a change in enforceable limitations. With specific regard to projects at PPG, you have asked two questions: (1) Was it proper in 1995, when furnace 507 was modified, to relax the PSD avoidance limit originally established in 1988? (2) Is it proper to now allow PPG to relax the 1995 PSD avoidance condition and establish for a second time a PSD avoidance condition if the furnace is modified as is proposed in the pending permit application? Before answering these specific questions,

we provide the following general comments on the relaxation rule provision and on the concept of a modification precluding applicability of the relaxation provision.

Your letter appends an article prepared by Mr. Gary McCutchen of RTP Environmental Associates that discusses this issue in detail. In his discussion, Mr. McCutchen devotes considerable attention to the word “solely” that appears in the relaxation rule. Although we acknowledge that the word “solely” is used, we do not believe that it was intended to have the significance accorded to it in Mr. McCutchen’s article. Our opinion derives in part from a discussion in the preamble to the 1980 PSD rule revisions when the relaxation provision was added. (The 1980 final rule was published on August 7, 1980. The preamble discussion on the relaxation provision appears at 45 FR 52689.) The preamble discussion reads as follows:

“Finally, as a result of today’s policy, a potential problem exists concerning the future relaxation of a preconstruction permit that previously caused a proposed stationary source to enjoy minor rather than major status. For example, a source might evade NSR through agreement to unrealistically stringent operating limitations in its permit, and later obtain a relaxation of the condition. The Agency believes that the problem can be dealt with by 40 CFR 52.21(r)(4) [which has the same language as 40 C.F.R. § 51.166(r)(2)], entitled ‘Source Obligation.’ That paragraph provides that any owner or operator of a source, who would receive a relaxation of a permit condition that had enabled avoidance of NSR, would then become subject to the original permit, as if they were new sources. In other words, if operational limitations are to be considered as an aspect of a source’s design, it is reasonable that the permit accurately incorporate that design. If such operation is changed, the permit, and concomitant obligations, should be correspondingly changed.”

Note that this preamble discussion does not mention the word “solely” and does not provide any support for the idea that a modification would preclude applicability of the relaxation provision. Furthermore, as you have pointed out to us in previous discussions, an interpretation of the “solely by virtue of” clause to exclude projects involving a modification easily could lead to an abuse akin to sham permitting. If any modification, including a modification that was not “major,” would nullify applicability of the relaxation provision, then misuse of the clause would occur.

Going beyond merely the possibility of sham permitting, however, our opinion is that the relaxation provision has a broader meaning for PSD purposes. If a source owner elects to accept an enforceable limitation to avoid PSD requirements for an emissions unit or process, then a revision of that limitation for any reason (including a physical change) could trigger the relaxation provision. This opinion is supported, for example, by the 1980 PSD rules preamble discussion quoted above, including the sentence repeated here: “If such operation is changed, the permit, and concomitant obligations, should be correspondingly changed.”

We now return to your two specific questions.

(1) Was it proper in 1995, when furnace 507 was modified, to relax the PSD avoidance limit originally established in 1988? Answer: We recommend that NCDAQ review the details of the 1995 modification and reach a determination in light of the opinions expressed above.

(2) Is it proper to now allow PPG to relax the 1995 PSD avoidance condition and establish for a second time a PSD avoidance condition if the furnace is modified as is proposed in the pending permit application? Answer: No. Our opinion is that this would not be proper without PSD review as explained above.

### Question #3 - Components of an Affected Emissions Unit or Source

As pointed out in your letter, a fiberglass manufacturing plant furnace consists of three components: a melter, refiner, and forehearth. You asked if these three components should be considered a single affected emissions unit under PSD rules or as three separate units. You also asked about furnace components that could be included under an emissions “cap” if PPG is allowed to make a modification without triggering the relaxation provision discussed under Question #2 above.

Our opinion discussed above is that the relaxation provision would be triggered by a modification of the furnace. In light of this opinion, therefore, no further discussion is needed from us on the definition of an emissions unit and the question of components to include under a cap.

### Question #4 - New Source Performance Standards

Your fourth question relates to NSPS applicability. As described in your letter, PPG has modified the melter component of furnace 507 on at least two occasions. The melter area was expanded in 1988, and in 1995 a conversion to oxygen firing and an increase in the pull rate capacity took place. Although a physical change had occurred to the melter in both cases, PPG requested that the changes not be considered modifications with respect to NSPS subpart CC because PPG was willing to demonstrate that no increase in actual particulate matter emissions would occur. Following the melter expansion in 1988, PPG performed testing that showed that at certain pull rates the particulate matter emissions exceeded the prior actual emissions. In an attempt to avoid NSPS, PPG restricted the pull rate to ensure an increase in particulate emissions would not occur during normal source operation. You indicated in your letter that NSPS applicability must be determined with the furnace operating at its design capacity, and a permit limit to restrict capacity is insufficient to avoid NSPS applicability. Although NCDAQ’s position is that to avoid NSPS applicability a facility must make permanent physical changes and demonstrate that it has effectively revised the unit’s design capacity, PPG has suggested that it is acceptable to take a permit limit to restrict capacity.

A modification is defined in 40 C.F.R. § 60.14(a) as “any physical or operational change to an

existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies.” For NSPS purposes, as indicated in 40 C.F.R. § 60.14(b), an increase in emission rate is determined in terms of kilograms per hour. The change in emission rate associated with a physical or operational change is determined by comparing the hourly emissions at maximum capacity prior to the change with the hourly emissions at maximum capacity after the change. As required in 40 C.F.R. § 60.14(b)(2), when determining whether a physical or operational change will result in an increase in emission rate, all operating parameters which may affect emissions must be held constant to the maximum feasible degree. Therefore, any prospective changes in fuel or raw materials accompanying the physical or operational change are not considered in determining the maximum capacity after the change occurs. Also, consistent with past applicability determinations made by EPA, NSPS applicability must be assessed based on a unit’s capacity following the physical or operational change. Only permanent physical limitations on the maximum capacity of an emission unit are considered in determining the emissions rate following a physical or operational change. Permit restrictions to limit a unit’s production capacity and emission rate are not considered permanent physical restrictions and are not considered in determining whether a physical or operational change has resulted in a modification under NSPS.

If you have any questions concerning the comments in this letter, please call Jim Little of the EPA Region 4 staff at (404) 562-9118.

Sincerely,

/s/

R. Douglas Neeley  
Chief  
Air and Radiation Technology Branch  
Air, Pesticides, and Toxics  
Management Division