



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

November 30, 2000

Mr. John M. Daniel, Jr. PE., D.E.E.  
Director, Air Program Coordination  
Commonwealth of Virginia  
Department of Environmental Quality  
P.O. Box 10009  
Richmond, Virginia 23240

Dear Mr. Daniel:

I am writing in response to your June 22, 2000 letter, regarding Prevention of Significant Deterioration (PSD)/Best Available Control Technology (BACT) questions you raised associated with a proposed modification at E.I. Du Pont De Nemours and Company's Spruance Plant (DuPont). In your letter, you indicated that the DuPont-Spruance Plant is a synthetic fiber manufacturing facility in Richmond, Virginia, and that the facility operates several solvent-spun synthetic fiber manufacturing lines, each making a different fiber type. The particular line in question is the facility's NOMEX line. Volatile organic Compound (VOC) emissions from the NOMEX line have averaged 400 tons/yr over the 1998-1999 time period, making it an existing major source under the New Source Review/Prevention of Significant Deterioration (NSR/PSD) regulations. You further indicate that the facility has not previously been permitted under PSD, and that the proposed modification at the facility will involve physically modifying the spinning and solvent recovery operations. There are no other emission units at the facility being physically modified as part of this proposed project. Based on this scenario, you have posed several questions regarding how to perform the NSR/PSD applicability determination and, if subject to PSD, where Best Available Control Technology (BACT) applies. Discussed below are the specific questions you've raised in your letter and our response.

The first question posed asked whether Dupont's proposed project should be considered a modification to one emission unit, with the emission unit being defined to include the spinning, wash/draw, and solvent recovery operations together. These operations together constitute the solvent-spun synthetic fiber process. It was indicated in your letter that this definition of emission unit could be supported by the definition of affected facility contained in the New Source Performance Standard (NSPS) for this source category (Subpart HHH) which defines the entire solvent-spun synthetic fiber process as the affected emission unit. Or, alternatively, you asked whether the correct approach would be to consider each part of the process (ie., spinning, solvent recovery, wash/draw) as an individual emission unit. It was indicated in your letter, this approach might be more consistent with how emission unit have been historically defined under PSD regulations, both state-wide (Virginia) and nationally. You then wanted to know how our response to this question would affect the PSD applicability calculation and BACT requirement.

In order to fully address these questions, I would first like to discuss the steps in the process to determine PSD applicability.

A modification is subject to PSD review only if (1) the existing source that is being modified is “major”, and (2) the net emissions increase of any pollutant emitted by the source, as a result of the modification, is “significant”. In this case, the existing source is major. In order to determine the net emissions increase of any pollutant emitted by the source as a result of the modification, you need to first determine whether the proposed emissions increases at the major source are by itself significant (significant emission rates are defined in 40 CFR §52.21). This is the first step in determining whether a “net emissions increase” has occurred (see definition of net emissions increase, 40 CFR §52.21). Specifically, you would include any increase in actual emissions from a particular physical change or change in the method of operation at a stationary source. This would include emissions increases from the new and modified emissions units and any other plant-wide emissions increases (e.g., debottlenecking increases). Therefore, whether you define the entire process as the emission unit or each part of the process as an individual emission unit, it would not change the PSD applicability calculation since all emissions increases associated with a modification must be included in the calculations.

In order to determine how the “emissions unit” should be defined in this case, EPA would first look to the definition of “emissions unit” found at 40 CFR 51.165(a)(1)(vii). Here it defines “emissions unit” as “any part of a stationary source which emits or has the potential to emit any pollutant subject to regulation under the Act”. Furthermore, the federal regulations define “potential to emit” as “the maximum capacity of a stationary source to emit a pollutant under its physical and operational design”. For the purpose of defining an emission unit, air pollution control equipment can be considered as part of the operational design of the unit. Therefore, in defining what constitutes an emissions unit, EPA considers appropriate application of control technology to be an important criterion.

In order to evaluate appropriate application of control technology once PSD is triggered, we look to the definition of BACT which states:

“Best available control technology means an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Act which would be emitted from any proposed major stationary source or major modification which the reviewing authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combination techniques for control of such pollutant.....”.

During each BACT analysis, which is done on a case-by-case basis, the reviewing authority evaluates the energy, environmental, economic and other costs associated with each alternative technology, and the benefit of reduced emissions that the technology would bring. In

order to determine how to evaluate emissions control at a modified source, all available information should be used. An NSPS is one source of information that may be helpful in defining an emission unit for the purpose of evaluating control options. In this case, NSPS, Subpart HHH - Standards of Performance for Synthetic Fiber Production Facilities, provides relevant information on how control of emissions from modification to the spinning and solvent recovery processes should be evaluated.

NSPS, Subpart HHH is applicable to each solvent-spun synthetic fiber process, commencing construction or reconstruction after November 23, 1982, that produces more than 500 megagrams of fiber per year. Although Dupont's NOMEX line was originally constructed in the 1970's, and is currently not subject to this NSPS, the rationale contained in the NSPS for determining emissions control from this type of line is still relevant in a BACT analysis. The NSPS defines the solvent-spun synthetic fiber process as the total of all equipment having a common spinning solution preparation system or a common solvent recovery system, and that is used in the manufacture of solvent-spun synthetic fiber. It includes spinning solution preparation, spinning, fiber processing (wash/draw) and solvent recovery, but does not include the polymer production equipment. The November 23, 1982 preamble to NSPS Subpart HHH provides the rationale for designating the solution preparation area or solvent recovery system as the affected facility. It states that "...designating each group of lines with a common solution preparation area or solvent recovery system as an affected facility represents the smallest unit from which emissions can be determined reasonably from both a technical and cost standpoint...". In promulgating this NSPS, it was determined that the "affected facility" could be controlled in a technically-achievable and cost-effective manner, and we have no present reason to question that assessment. Therefore, we think it is appropriate to follow the NSPS in this case.

Given this rationale, it is EPA's position that the modified emissions unit, in this case, consists of the entire solvent-spun synthetic fiber process, which would include all equipment within the solution preparation area and solvent recovery system. Although an emissions unit may consist of a single piece of equipment, here the appropriateness of applying controls over multiple units justifies viewing the affected facility as defined by NSPS Subpart HHH, to be the emissions unit. Accordingly, EPA would require a BACT analysis to be conducted for the entire process when there is a modification to any equipment within the solution preparation area or solvent recovery system in order to appropriately evaluate control options. This would mean that modifications to the spinning operation and/or solvent recovery system, resulting in the triggering of PSD, would constitute a modification to the entire emissions unit, which includes the wash/draw operation, and the BACT analysis should include all these operations.

This determination is consistent with guidance issued by EPA, Region VIII in a letter dated February 6, 1990, regarding a determination of Lowest Achievable Emission Rate (LAER) for Coors Container. In this letter, EPA determined that an emissions unit consisted of the entire coating operation (topcoat, basecoat, etc) based on the NSPS definition of affected facility for that source category (Subpart WW). The NSPS definition of emissions unit was relied on

because the rule provided a rationale as to why these processes should be grouped together for purposes of setting a unique emission limitation covering all the equipment. It was determined that this was the most technically-achievable and cost-effective way to evaluate control for these operations. Therefore, in this case, EPA indicated that a BACT or LAER analysis should be done for each coating operation.

Our position on this particular matter is only provided as guidance, as it remains the Commonwealth's particular responsibility to make the final determination under your federally approved New Source Review regulations. I hope we have fully addressed your questions. If you would like to discuss these issues further, please contact me at (215) 814-2654, or Donna Weiss of my staff at (215) 814-2198.

Sincerely,

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Judith M. Katz, Director  
Air Protection Division