ADVANCED NOTICE OF FINAL RULMAKING
#2683
EQB #7-420
CONTROL OF NOx EMISSIONS FROM GLASS MELTING FURNACES

SCHOTT

#2683

October 09, 2009

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VIA ELECTRONIC MAIL
And CERTIFIED MAIL

Jane Mahinske, Section Chief
Pennsylvania Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Quality
Rachel Carson Office Building
400 Market Street
Harrisburg, PA 17101

Re: Comments of SCHOTT North America, Inc.
Draft Final-Form Rulemaking
Control of NO_X Emissions from Glass Melting Furnaces
39 Pa.B. 5318 (September 12, 2009)

Dear Ms. Mahinske:

SCHOTT North America, Inc. (SCHOTT) appreciates the opportunity to provide these comments on the Pennsylvania Department of Environmental Protection (PADEP) Draft Final-Form Rulemaking on the Control of NO_X Emissions from Glass Melting Furnaces (Draft Final-Form Rulemaking), which was published at 39 Pa.B. 5318 (September 12, 2009). These comments are timely filed prior to the October 14, 2009 close of the public comment period.

The SCHOTT facility, located in Duryea, Pennsylvania, produces high quality optical precision glass, as well as other special purpose glass, that is not produced in any other facility in the State of Pennsylvania or the United States (U.S.). Our glass products are made to a precise formula of raw materials, heated in a very prescriptive manner, and then cast or formed to detailed standards. SCHOTT glass products are supplied for laboratory/ research analytics and measurement, advanced materials, pharmaceutical, bio-technology, precision optics, aerospace and U.S. Defense Department applications. Production of our glass products requires the addition of many raw materials that are not found in typical glass manufactured for container glass, flat glass, or other pressed and blown glass products which comprise the majority of glass manufacturing in Pennsylvania and the entire U.S.

SCHOTT is potentially affected by the proposed Draft Final-Form Rulemaking because our facility, while not meeting the specific glass types listed, would be included in the "all other" category of glass furnaces. SCHOTT utilizes glass melting furnaces that are permitted to operate at a potential to emit nitrogen oxides (NO_X) at a rate greater than 50 tons per year. SCHOTT currently operates its facility pursuant to Title V Operating Permit #40-

SCHOTT

00034 issued by PADEP on January 18, 2006, which, among other things, limits NO_X emissions from our glass melting operations to 235 tons per year based on a 12-month rolling average. In addition, SCHOTT is subject to 40 CFR Part 61, Subpart N National Emission Standards for Inorganic Arsenic Emissions from Glass Manufacturing Plants, and 40 CFR Part 63, Subpart SSSSSS National Emission Standards for Hazardous Air Pollutants (NESHAP) from Glass Manufacturing Area Sources. SCHOTT presently has a plan approval application filed with PADEP for installation of a fabric filter dust collector to control emissions from its glass manufacturing operations to meet requirements of 40 CFR Part 63, Subpart SSSSSS.

Over the last ten (10) years SCHOTT has taken action to reduce the NO_X emissions from its glass manufacturing operations. Our facility's level of NO_X emissions produced from the heating of the glass raw materials has been significantly reduced over this time period. Presently 63% of the heat required to melt the glass raw materials is supplied by electric powered electrodes in the bottom of the furnaces, with the remainder coming from natural gas fired burners that combust with oxygen only. This electrical heating and oxygen/natural gas combustion heating significantly reduces NO_X emissions from what would be emitted if traditional combustion was used to provide process heat.

In anticipation of the publication of the Draft Final-Form Rulemaking, on August 12, 2009, SCHOTT met with you and other representatives of PADEP. During this meeting SCHOTT presented information to PADEP demonstrating how the production of our glass products differs from typical glass manufacturing, how the special qualities of our products make us unique, and how, because of this uniqueness, applicability of a rulemaking that establishes NO_X emission limits based on typical glass manufacturing processes will present potentially insurmountable challenges to the continued viability of SCHOTT's specialty glass manufacturing operations in Pennsylvania and the U.S. We greatly appreciated that opportunity PADEP provided for SCHOTT to discuss our concerns, and we acknowledge that the Draft Final-Form Rulemaking includes provisions that appear to be intended to address some of SCHOTT's unique issues for further reductions in NO_X emissions.

SCHOTT's comments related to the Draft Rulemaking are as follows:

Comment 1: SCHOTT generally supports the provision proposed at 25 Pa. Code § 129.304(c) allowing for owners and operators of glass melting furnaces with unique processes for which it is infeasible to meet the standards established in the Draft Rulemaking to petition PADEP for an alternate standard.

Almost all of the NO_X emissions from our production are from the nitrate compounds that must be used in order to introduce the special raw materials needed to produce our specialty glass products. While SCHOTT has worked hard to find substitute non-nitrate compounds suitable for use to introduce raw materials, thus far we have only been able to make partial substitutions of carbonates for nitrates on a limited number of specific glass compositions. In addition, while NO_X emissions from the overall facility over long periods of time are lower, the complex scheduling required for our specialty glass production results in the inability to assure that emissions at the individual furnace level can be kept below applicability thresholds and/or specific emissions limits over prescribed shorter time periods. At SCHOTT, operation of all of our glass manufacturing furnaces must be scheduled in a way that avoids critical raw material contamination from one glass to another. A long run of one type of glass is only approximately 3 months. A 3-month production run may be followed by an expensive relining of the furnace's refractory, so as to begin a carefully orchestrated schedule of many different glass types. The glass products are produced after a complicated assessment of which glass products can be sequenced for manufacturing so as to not introduce residues from previous glass materials that would make the next product unusable. SCHOTT has made over 500 different types of glass. In any given year, SCHOTT makes approximately 50 different types of glass.

SCHOTT

The possibility of SCHOTT employing add-on control for NO_X on its glass melting furnaces is also infeasible. SCHOTT has updated the NO_X control costs that were provide in its 2001 RACT Plan to PADEP. (This update is included as an attachment to this letter.) In this updated analysis the revised control cost for the least expensive NO_X control option, which is a 2-stage scrubber, reflects a NO_X emission cap at 175 tons per year, which is significantly less than the current limit established by the SCHOTT Facility's Title V Operating Permit. Installation of the specified scrubber control option would require a total capital investment of almost $4 million dollars and an annualized control cost of $5,330 per ton of NO_X removed. This would be in addition to a currently planned control installation to comply with the NESHAPs that are applicable to SCHOTT. As discussed in our August 12, 2009 meeting, the specialty glass market would not support a product price increase that would be needed for SCHOTT to make such an investment at its Duryea facility. Therefore, if the scrubber control option were required to meet new and more stringent NO_X emissions standards applicable to SCHOTT's production of specialty glass at its Duryea facility, to remain a viable business, production of most of the glass products currently made at Duryea would have to be moved to SCHOTT's sister glass melting facility located in Germany.

The installation of any add-on NO_X control at SCHOTT is further complicated. Due to the unique nature of SCHOTT's process in which compound additions are made periodically, the resulting high concentrations of NO_X emissions during short periods of time would need to be controlled. None of the studies for NO_X control from flat glass, container glass, pressed or blown glass or fiberglass furnaces have considered this type of NO_X emission profile. Still more complications arise from the need to locate any add-on NO_X control at the exhaust of the fabric filter dust collector that SCHOTT is installing to meet requirements of 40 CFR Part 63, Subpart SSSSSS.

The information provided above demonstrates that it is economically and technically infeasible for SCHOTT to meet the NO_X emission limits proposed in the Draft Final-Form Rulemaking. In the absence of specific requirements in the Draft Final-Form Rulemaking that are economically and technically feasible for SCHOTT to achieve, the provision to petition for an alternate standard does provide some hope that, if approved, an alternate standard would allow continued viability of SCHOTT's specialty glass manufacturing operations in Pennsylvania and the U.S. However, as we discuss further below, because of the uncertainty inherent to a petition process and its outcome, to reasonably allow for future business planning, PADEP must provide in the Final Rulemaking a definitive and feasible alternate standard or exemption applicable to unique specialty glass operations such as SCHOTT's.

Comment 2: PADEP should add within the Draft Final-Form Rulemaking a definitive and feasible alternate standard or exemption applicable to unique specialty glass operations such as SCHOTT's.

The information provided in Comment 1 above demonstrates that it is economically and technically infeasible for SCHOTT to meet the NO_X emission limits proposed in the Draft Final-Form Rulemaking. This information was also previously provided to PADEP and discussed in detail during our meeting on August 12, 2009. In addition to this information, during the August 12, 2009 meeting, and in subsequent correspondence (see attached copy of letter dated August 17, 2009), SCHOTT suggested and discussed with PADEP possible alternatives for alternate feasible standards applicable to SCHOTT. For example:

- SCHOTT would be willing to take a further reduction in its permitted NO_X emissions cap to limit total glass furnace NOx emissions to no more than 175 tons per rolling 12-month period. This is a reduction in our potential emissions of NO_X by 60 tons per year (tpy) and an actual emission reduction of NOx from historical levels. This would in fact be an actual emission reduction of over 6 tpy from as recent as 2004. Please see the table below.

SCHOTT

Year	2004	2005	2006	2007	2008
NO_X (tpy)	181.38	86.24	121.36	160.14	75.53

- To further implement NO_X emissions reduction, SCHOTT is also willing to limit glass production from an individual furnace to less than 5 tons per day.

- SCHOTT is willing to take an additional permit limit that restricts its NO_X emissions from a furnace, as averaged over all furnaces, to less than 50 tons per 12-month rolling period.

For purposes of reasonable business planning, SCHOTT requires the certainty of a definitive and feasible alternate standard or exemption applicable to its unique specialty glass operations. In light of the permit restrictions that SCHOTT has taken or is willing to take, as expressed to PADEP both previously and in this letter, SCHOTT respectfully requests that, prior to finalization of the Draft Final-Form Rulemaking, PADEP continue discussions with SCHOTT to establish mutually agreeable, feasible and enforceable permit restrictions that will achieve further NO_X emissions reductions at SCHOTT. In conjunction with the establishment of these NO_X reduction mechanisms, SCHOTT further requests that PADEP incorporate the following regulatory revisions in the final version of the Draft Final-Form Rulemaking.

CHAPTER 121
GENERAL PROVISIONS

§ 121.1. Definitions.
****ADD****
Specialty Glass: **Glass manufactured in furnaces to custom specifications for special uses which include, but are not limited to, applications for Analytics & Measurement, Advanced Materials, Pharmaceutical, Bio-Technology, Optics, Aerospace and Defense. Furthermore, the glass production must be limited to less than 5 tons/day per furnace and where the heat is supplied to the furnace from at least 50% electric sources and the remaining heat is supplied from burners that utilize oxygen as total replacement for combustion air.**

CHAPTER 129
STANDARDS FOR SOURCES

§ 129.302. Applicability.
****ADD****
This section, § 129.301 (relating to purpose) and §§129.303-129.310 apply to an owner or operator of specialty glass melting furnaces which emit, or have the potential to emit, NO_X averaged over all of the glass melting furnaces at a rate greater than 50 tons per year.

Regardless of whether PADEP incorporates the above language suggested by SCHOTT into the final version of the Rulemaking, for the reasons we have stated in Comment 1 above, the provision at 25 Pa. Code § 129.304(c) allowing facilities to petition for an alternate standard should remain in the final version of the Rulemaking. Inclusion of this provision will allow an opportunity for unique specialty glass operations such as SCHOTT to request, and possibly receive, reasonable relief from unintended and extreme burdens under the final Rule.

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Comment 3: PADEP should remove the short term applicability criteria of 20 pounds per hour from 25 Pa. Code § 129.302 and define applicability in the Draft Rulemaking based only on long term emission rates.

Applicability to the Draft Final-Form Rulemaking as defined at proposed 25 Pa. Code § 129.302 includes glass melting furnaces that emit, or have the potential to emit, NO_X at a rate greater than 50 tons per year or *20 pounds per hour* (emphasis added). Defining an applicability threshold based on tons per year is reasonable and appropriate to assure that the most significant emitters of NO_X are subject to the rule. However, including a short term rate in the applicability definition, such as 20 pounds per hour, unnecessarily broadens the scope of applicability to glass melting operations that, due to uniqueness of their processes, may from time to time, depending on the glass type being melted, emit NO_X at short term rates greater than 20 pounds per hour for limited periods (weeks or months), but are otherwise below 50 tons NOx per year for the furnace. Making such operations subject to the requirements as specified in the Draft Final-Form Rulemaking will not achieve significant incremental overall reductions in NO_X emissions in Pennsylvania, and therefore places an unreasonable burden on such operations. Additionally, the 20 pound per hour applicability provision is not, by itself, supported by any reasonable measure of control cost on a dollar-per-ton basis. SCHOTT requests that PADEP delete any short term emission rate from the applicability definition such that when finalized the Draft Final-Form Rulemaking will apply only to those sources that emit significant amounts of NO_X above an appropriate long term threshold expressed in tons per year.

Comment 4: PADEP should clarify that sources granted an alternate emission limitation pursuant to the petitioning provision are not otherwise subject to any other NO_X limitations.

Proposed 25 Pa. Code § 129.304(a) in the Draft Rulemaking establishes allowable NO_X emissions limitations for glass melting furnaces and provides that the emissions from glass melting furnaces must be below these allowable limits or NO_X emission limits contained in an applicable Plan Approval or Operating Permit, *whichever is lower*. This language does not specifically acknowledge any alternate emission limitation approved pursuant to the petitioning provision in the Draft Final-Form Rulemaking. SCHOTT requests that PADEP clarify the applicability of alternate emission limitations approved pursuant to the petitioning provision by revising proposed § 129.304(a) as follows:

§ 129.304. Emission Requirements.

(a) Except as specified in §§ 129.303, 129.304(c), 129.305, 129.306 and 129.307 (relating to exemptions; alternate emission limitations or compliance schedules; start-up requirements; shutdown requirements; and idling requirements), the owner or operator of a glass melting furnace may not operate the glass melting furnace in a manner that results in NO_X emissions in excess of the following allowable limits or NO_X emission limits contained in the Plan Approval or Operating Permit, whichever is lower:

SCHOTT appreciates the opportunities that PADEP has provided for a dialog on these proposed regulations, including this public comment period. As expressed herein and in previous material supplied by SCHOTT to PADEP, the continued ability for SCHOTT's to produce specialty glass in Pennsylvania and the U.S. for our customers with their unique glass applications is at the heart of our concerns. I invite PADEP to contact me directly concerning any questions you may have regarding these comments. I can be reached by telephone at 570.457.7485 x388, or by email at tom.mcdonald@us.schott.com. Thank you for your consideration of these comments.

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Respectfully submitted,

SCHOTT North America, Inc.

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Attachments

cc: Neal Lebo, All4 Inc.