Order
Department of Environmental Protection
Environmental Quality Board
25 *Pa. Code* Chapters 121 and 129

The Environmental Quality Board (Board) amends Chapters 121 and 129 (relating to general; and standards for sources) to read as set forth in Annex A. This final-form rulemaking will control nitrogen oxide (NOx) emissions from glass melting furnaces.

This order is adopted by the Board at its meeting of _____, 2010.

A. Effective Date

These final-form amendments will be effective upon publication in the *Pennsylvania Bulletin* as final rulemaking.

These final-form amendments will be submitted to the United States Environmental Protection Agency (EPA) as a revision to the Pennsylvania State Implementation Plan (SIP) upon final rulemaking.

B. Contact Persons

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C. Statutory Authority

This action is being taken under the authority of section 5(a)(1) of the Air Pollution Control Act (APCA) (35 P.S. § 4005(a)(1)), which grants to the Board the authority to adopt regulations for the prevention, control, reduction, and abatement of air pollution.

D. Background and Summary

When ground-level ozone is present in concentrations in excess of the Federal health-based standards, public health is adversely affected. The EPA has concluded that there is an association between ambient ozone concentrations and increased hospital admissions for respiratory ailments, such as asthma. Further, although children, the elderly and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to ambient ozone while engaged in activity that involves physical exertion. Though these symptoms are often temporary,

repeated exposure could result in permanent lung damage. The implementation of additional measures to reduce exposure to elevated ozone concentrations in this Commonwealth is necessary to protect the public health and the environment. The EPA established the 8-hour ozone National Ambient Air Quality Standard (NAAQS) at 0.08 parts per million (ppm) on July 18, 1997. See 62 FR 38856. On March 12, 2008, the EPA issued a more protective 8-hour ozone standard of 0.075 ppm that would require additional reductions of ozone precursor emissions in this Commonwealth. See 73 FR 16436 (March 27, 2008). However, the EPA has reconsidered the 2008 ozone NAAQS and on January 19, 2010, published a proposed rulemaking to set a more protective 8-hour primary standard at a lower level within the range of 0.060-0.070 ppm. See 75 FR 2938. The final revised ozone NAAQS is expected in August 2010.

In addition, the adoption and implementation of this final rulemaking will also allow the Commonwealth to make progress in attaining and maintaining the fine particulate matter (PM2.5) NAAQS, since NOx is a PM2.5 precursor. See 73 FR 28321 at p. 28325 (May 16, 2008). The health effects associated with exposure to PM2.5 are significant. Epidemiological studies have shown a significant correlation between elevated PM2.5 levels and premature mortality. Other important effects associated with PM2.5 exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems. Individuals particularly sensitive to PM2.5 exposure include older adults, people with heart and lung disease, and children. On November 13, 2009, the EPA designated six areas including all or portions of 22 counties in this Commonwealth as nonattainment areas for the 2006 24-hour PM2.5 NAAQS. See 74 FR 58688 at p. 58758 (November 13, 2009).

The purpose of this final rulemaking is to reduce emissions of NOx from glass melting furnaces in order to reduce levels of ground-level ozone and fine particulate. Ground-level ozone is not directly emitted by pollution sources, but is created as a result of the chemical reaction of NOx and volatile organic compounds (VOC) in the presence of light and heat. The reduction of NOx emissions will also help protect the public health and environment from high levels of PM2.5, of which NOx is a precursor component. The reduction of NOx emissions also reduces visibility impairment and acid deposition. As a result, to the extent that it is more stringent than any corresponding federal requirement, this regulation is reasonably necessary to achieve or maintain the NAAQS for both ozone and PM2.5.

The glass industry in this Commonwealth produces a variety of products, including flat glass, container glass, fiberglass and pressed and blown glass. In 2002, flat glass production accounted for approximately 7,450 tons of NOx emissions; container glass production accounted for approximately 1,800 tons of NOx emissions; fiberglass production accounted for approximately 150 tons of NOx emissions; and pressed and blown glass, including picture tube glass, accounted for approximately 2,500 tons of NOx emissions. Total glass melting furnace NOx emissions in 2002 were approximately 11,900 tons. Since 2002 a number of furnaces or facilities, or both, have discontinued operation or made process changes and total NOx emissions during 2005 were approximately 9,814 tons. As a result, the glass industry in Pennsylvania remains one of the largest sources of NOx emissions in this Commonwealth.

This Commonwealth, along with the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont and Virginia, and the District of Columbia, are members of the Ozone Transport Commission (OTC), which was created under section 184 of the Federal Clean Air Act (CAA), 42 U.S.C.A. § 7511c, to develop and implement regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic regions. To date, States from the OTC, including this Commonwealth, have established a number of regulatory programs to reduce ozone precursor emissions, including programs related to portable fuel containers, architectural and industrial maintenance coatings and consumer products. Consistent with its strategy to achieve equitable ozone precursor emission reductions from all industrial sectors, this Commonwealth, along with other OTC States, has met with representatives of the glass industry to discuss reductions of NOx emissions from glass melting furnaces. There is general agreement that the NOx emission regulatory limits for the glass industry developed by the San Joaquin Valley Air Pollution Control District (SJVAPCD) in California are appropriate NOx emission limits for glass melting operations located in this Commonwealth and the other OTC States. The San Joaquin Valley regulation was first adopted in 1994 and subsequently amended in 1998, 2002 and 2006; this amended regulation was used to develop the Commonwealth's regulation, which serves as the OTC model rule for glass melting furnaces. The Department reviewed, analyzed and concurred with the OTC's control measures summary document for glass melting furnaces with respect to the individual glass melting furnaces located in this Commonwealth, and determined that proposing a glass melting furnaces regulation based on the SJVAPCD Rule's mix of control options to meet specified emission limits was the appropriate implementation strategy for a rulemaking to control NOx emissions from this Commonwealth's glass melting furnaces.

As part of the proposed rulemaking, the Board under § 129.309 (relating to compliance demonstration) proposed that the owner or operator of a glass melting furnace may demonstrate compliance with the requirements of § 129.304 (relating to emission requirements) by surrendering Clean Air Interstate Rule (CAIR) NOx Ozone Season allowances for each ton of NOx emissions that exceeds the allowable emissions of the applicable glass melting furnaces. In response to comments received during the official public comment period on the proposed rulemaking for glass melting furnaces, and following the Department's review of other related information, the Department prepared a draft final-form rulemaking for public comment. The draft final-form rulemaking contained significant changes in several areas, and the Department believed that, while not legally required, further discussion and an additional comment period would serve the public interest. An Advance Notice of Final Rulemaking (ANFR) was published in the *Pennsylvania Bulletin* on September 12, 2009 (39 *Pa.B.* 5318). The most significant change made in the draft final-form rulemaking concerned deletion of the NOx surrender compliance option which allowed for the purchase of CAIR NOx allowances. The EPA held discussions with the Department subsequent to the closing of the public comment period on June 23, 2008, regarding the proposed rulemaking's option to demonstrate compliance with the emission limits through the purchase of CAIR NOx allowances under the EPA's CAIR regulation. During these discussions, the EPA indicated to the Department that providing a compliance option to purchase CAIR NOx allowances in the final-form rulemaking would jeopardize the approval of the Commonwealth's CAIR SIP revision, because glass melting furnaces are not specifically included in the EPA CAIR program as a source category. Therefore, the compliance option to purchase CAIR NOx allowances was deleted from the final-form rulemaking.

There are three additional significant changes to the final-form rulemaking:

(1) The provision requiring compliance with the emission limits during the ozone season from May-September has been deleted. The Department further revised the final-form rulemaking to require compliance with the NOx emission limits year-round because NOx is a precursor to the formation of PM2.5, which is monitored year-round. In addition, NOx is also a precursor to the formation of ozone, and it is anticipated that the EPA will extend the ozone monitoring season in this Commonwealth to go from March 1 to October 31, each year, requiring monitoring for the 8-hour ozone NAAQS for a longer period each year. See 74 FR 34525 at p. 34538 (July 16, 2009).

(2) The final-form rulemaking adds a NOx emission limit applicable to a glass melting furnace that produces a glass product that is other than flat, container, fiberglass, or pressed or blown.

(3) The final-form rulemaking provides a petition process for an alternative compliance deadline to any glass melting furnace that demonstrates it is economically or technologically infeasible to meet the January 1, 2012, compliance deadline, and an alternative emission limitation to a glass melting furnace that produces a glass product that is other than flat, container, fiberglass, or pressed or blown.

The Department worked with the Air Quality Technical Advisory Committee (AQTAC) in the development of these final-form regulations. At its November 18, 2009, meeting, the AQTAC recommended revisions to the final-form regulation and concurred with the Department's recommendation to advance the regulation to the Board for consideration as a final-form rulemaking.

The Department also conferred with the Citizens Advisory Council (CAC) concerning the final-form rulemaking on December 15, 2009. The CAC concurred with the Department's recommendation to advance the regulation to the Board for consideration as a final-form rulemaking.

E. Summary of Final-form Regulation and Changes from Proposed to Final-form Rulemaking

Summary of Final-form Regulation

The final-form amendments add the following new definitions and terms to § 121.1 (relating to definitions) used in the substantive provisions under §§ 129.301 – 129.310 (relating to control of NOx emissions from glass melting furnaces): "blown glass," "cold shutdown," "container glass," "fiberglass," "flat glass," "glass melting furnace," "idling," "permitted production capacity," "pressed glass," "primary furnace combustion system," "pull rate," "shutdown" and "start-up."

The following definitions and terms were deleted between proposed and final-form rulemaking: "100% air-fuel fired," "air-fuel firing," "complete reconstruction," "furnace

battery," "furnace rebuild," "multiple furnaces," "oxyfuel fired" and "oxygen-assisted combustion."

Final-form § 129.301 (relating to purpose) annually limits the emissions of NOx from glass melting furnaces.

Final-form § 129.302 (relating to applicability) specifies that the regulation applies to an owner or operator of a glass melting furnace that emits or has the potential to emit NOx at a rate greater than 50 tons per year.

Final-form § 129.303 (relating to exemptions) provides, among other things, that the emission requirements in § 129.304 (relating to emission requirements) shall not apply during periods of start-up, shutdown or idling as defined in § 121.1, if the owner or operator complies with the requirements of §§ 129.305, 129.306 and 129.307 (relating to start-up requirements; shutdown requirements; and idling requirements). Owners and operators claiming the exemption must notify the Department or approved local air pollution control agency within 24 hours after initiation of the operation for which the exemption is claimed. Additionally, the owner or operator of a glass melting furnace granted an exemption under § 129.303 shall maintain operating records or documentation, or both, necessary to support the claim for the exemption.

Final-form § 129.304 provides that the owner or operator of a glass melting furnace shall determine allowable NOx emissions by multiplying the tons of glass pulled by each furnace by: 4.0 pounds of NOx per ton (lbs NOx/ton) of glass pulled for container glass furnaces; 7.0 lbs NOx/ton of glass pulled for pressed or blown glass furnaces; 4.0 lbs NOx/ton of glass pulled for fiberglass furnaces; 7.0 lbs NOx/ton of glass pulled for flat glass furnaces; and 6.0 lbs NOx/ton of glass pulled for all other glass melting furnaces. The owner or operator of a glass melting furnace shall comply with the allowable NOx emissions by January 1, 2012, unless a petition for an alternative emission limitation or compliance schedule is submitted, in writing, to the Department or approved local air pollution control agency by January 1, 2012, and subsequently approved, in writing, by the Department or approved local air pollution control agency. It should be noted that an alternative emission limitation is only available to those facilities subject to the 6.0 lbs NOx/ton for all other glass melting furnaces. Facilities subject to the 4.0 pounds of NOx per ton (lbs NOx/ton) of glass pulled for container glass furnaces; 7.0 lbs NOx/ton of glass pulled for pressed or blown glass furnaces; 4.0 lbs NOx/ton of glass pulled for fiberglass furnaces; 7.0 lbs NOx/ton of glass pulled for flat glass furnaces are eligible for the alternative compliance schedule only, but are also eligible for an interim emission limitation until compliance is achieved with the applicable standard.

Final-form § 129.305 requires the owner or operator to submit specific information requested by the Department or approved local air pollution control agency to assure proper operation of the furnace. The owner or operator of a glass melting furnace may submit a request for a start-up exemption in conjunction with the plan approval application, if required. The length of the start-up exemption may not exceed a finite number of days depending on the type of furnace. The Department or approved local air pollution control agency may approve start-up exemptions to the extent that the request identifies, among other things, the control technologies or strategies to be used. Additionally, the owner or operator shall place the emission control system in operation as soon as technologically feasible during start-up to minimize emissions.

Final-form § 129.306 provides, among other things, that the duration of a glass melting furnace shutdown, as measured from the time the furnace operations drop below 25% of the permitted production capacity or fuel use capacity to when all emissions from the furnace cease, shall not exceed 20 days.

Final-form § 129.307 provides, among other things, that the owner or operator of a glass melting furnace shall operate the emission control system whenever technologically feasible during idling to minimize emissions.

Final-form § 129.308 (relating to compliance determination) provides, among other things, that not later than 14 days prior to the applicable date under § 129.304, the owner or operator of a glass melting furnace subject to this section and §§ 129.301-129.307, 129.309 and 129.310 shall install, operate and maintain continuous emissions monitoring systems (CEMS), (as defined in § 121.1) for NOx and other monitoring systems to convert data to required reporting units in compliance with Chapter 139, Subchapter C (relating to requirements for continuous source monitoring for stationary sources), and calculate actual emissions using the CEMS data reported to the Department or approved local air pollution control agency. However, the owner or operator of a glass melting furnace may elect to install and operate an alternate NOx emissions monitoring system or method approved, in writing, by the Department or approved local air pollution control agency. Data invalidated under Chapter 139, Subchapter C shall be substituted with other values if approved, in writing, by the Department or approved local air pollution control agency.

Final-form § 129.309 (relating to compliance demonstration) provides that the owner or operator of a glass melting furnace shall calculate and report to the Department or approved local air pollution agency on a quarterly basis no later than 30 days after the end of the quarter the CEMS data and glass production data used to show compliance with the allowable NOx emission limitations. The glass production data must consist of the quantity of glass in tons pulled per day for each furnace. Compliance can be demonstrated on a furnace-by-furnace basis; facility-wide emissions averaging basis; or a system-wide emissions averaging basis among glass melting furnaces under common control of the same owner or operator in this Commonwealth. The owner or operator for which the Department has granted approval to voluntarily opt into a market-based program may not demonstrate compliance on an emissions averaging basis. Moreover, an emission reduction obtained by emission averaging to demonstrate compliance with the emission requirements will not be considered surplus for emission reduction purposes.

Final-form § 129.310 (relating to recordkeeping) provides that the owner or operator of a glass melting furnace subject to the requirements of this section and §§ 129.301-129.309 shall maintain certain records to demonstrate compliance.

Changes from Proposed to Final-form Rulemaking

In addition to the revisions for definitions previously discussed in this section, changes from the proposed rulemaking to final-form rulemaking are summarized as follows:

In § 129.302, the metric “20 pounds per hour” and the May 1, 2009, applicability date were deleted from the final-form regulation. The phrase “appropriate approved local air pollution control agency” was added to this section.

Changes to § 129.303 from proposed and final rulemakings include, among other things, the deletion of the exemption related to glass melting furnaces heated by an electric current from electrodes submerged in molten glass. The final-form regulation includes a requirement that owners and operators of glass melting furnaces claiming an exemption must notify the Department or appropriate approved local air pollution control agency within 24 hours after the initiation of the operation for which the exemption is claimed. As part of the notification requirements, the owner or operator must identify the emission control system operating during the exemption period. Finally, the phrase "appropriate approved local air pollution control agency" was also added to subsections (b)-(d).

Revisions to § 129.304, among other things, include the requirement that the owner or operator of a glass melting furnace may not operate a glass melting furnace that results in NOx emissions in excess of the allowable emissions established therein or the NOx emission limits contained in the plan approval or operating permit, whichever is lower. This section has also been revised to allow the owners and operators of glass melting furnaces to submit a petition for an alternative emission limitation or compliance schedule, if that owner or operator is unable to meet the allowable NOx emission limits. In addition, the final-form rulemaking adds language on the types of furnaces eligible for an alternative emission limitation, and sets forth the information necessary to be included in a petition that will be considered by the Department or appropriate approved local air pollution control agency. Lastly, an exemption from the NOx emission limits is provided under certain conditions during routine maintenance of an add-on emission control system, maintenance or repair of certain components of the glass melting furnace.

Final-form changes to § 129.305 include, among other things, start-up exemption periods for all other glass melting furnaces not otherwise covered under the proposed rulemaking. The final-form regulation also includes maximum start-up exemption periods for certain glass melting furnaces that employ NOx control systems not in common use or not readily available from a commercial supplier. Section 129.305 also includes language that allows, in addition to the Department, an approved local air pollution control agency to be notified and to make certain determinations related to start-up requirements.

Changes to §§ 129.306 and 129.307 authorize an approved local air pollution control agency, in addition to the Department, to determine when the operation of an emission control system is technologically feasible.

In § 129.308, the final-form regulation allows the highest valid 1-hour emission values to be substituted if data is invalidated under Chapter 139, Subchapter C. An approved local air pollution control agency may also make compliance determinations under this section.

Changes to § 129.309 between proposed and final-form rulemaking include the deletion of all language related to the use and surrender of CAIR NOx ozone season allowances.

In § 129.310, the owner or operator claiming that a glass melting furnace is exempt from the requirements of §§ 129.301 – 129.309 based on the furnace's potential to emit must maintain records that clearly demonstrate to the Department or appropriate approved local air pollution control agency that the furnace is not subject to those regulatory requirements.

F. Summary of Comments and Responses on the Proposed Rulemaking

Comments and Responses on the Proposed Rulemaking

A commentator supports and strongly urges the adoption of the NOx emission limits for fiberglass plants consistent with the 4.0 lbs NOx/ton of glass pulled adopted by the OTC. The Board appreciates the commentator's support of the proposed rulemaking for fiberglass plants.

A commentator stated that the emission limit for fiberglass plants in the proposed rule can be achieved by currently available technologies, and the emission limit is a technologically feasible and pragmatic approach requiring implementation of low-NOx combustion technology. The Board agrees with the commentator that the emission limit for fiberglass furnaces can be achieved with technologies currently available.

The commentator stated that it is an arbitrary and capricious action to base the regulation's proposed NOx emission limits on a California rule without an explanation as to why they are appropriate to this Commonwealth. The Board disagrees with the commentator. The Board proposed the allowable NOx emission requirements as a result of the research conducted by and the recommendations of the Northeast OTC. The Northeast OTC is a multi-state organization created under Section 184 of the CAA. 42 U.S.C.A. § 7511c. The OTC is responsible for advising the EPA on ground-level ozone pollution transport issues and for developing and implementing regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic regions. The members of the OTC (this Commonwealth, CT, DE, MA, MD, ME, NH, NJ, NY, RI, VA and VT, and the District of Columbia) are required to demonstrate attainment with the 1997 8-hour ozone standard of 80 ppb. See 62 FR 38855 (July 18, 1997).

Additionally, on March 12, 2008, the EPA issued a more protective 8-hour ozone standard of 75 ppb that would require additional reductions of ozone precursor emissions. See 73 FR 16436 (March 27, 2008). The 2008 revised standard would require additional reductions of emissions of ozone precursors, including NOx, that impact each member's nonattainment status. As required by the Federal Clean Air Act (CAA), the Commonwealth submitted recommendations to the EPA in 2009 to designate 29 counties as nonattainment for the 2008 8-hour ozone NAAQS. The EPA was expected to take final action on the designation recommendations by March 2010. However, the EPA has reconsidered the 2008 ozone NAAQS and on January 19, 2010, published a proposed rulemaking to set a more protective 8-hour primary standard at a lower level within the range of 0.060-0.070 ppm; the final revised ozone standard is expected in August 2010. See 75 FR 2938. If, as is widely expected, the EPA tightens the ozone standard, the additional NOx emissions from the final-form rulemaking for glass melting furnaces will be even more important than if the current 2008 ozone standard remains in place. In addition, Northeast states are conducting attainment planning work to support development of PM2.5 and regional haze SIPs to satisfy obligations under the CAA and regulations issued under the CAA. See 74 FR 58688 (November 13, 2009) and 64 FR 35714 (July 1, 1999). NOx emissions are precursors to the development of PM2.5 and regional haze.

The OTC undertook a study to identify a suite of additional control measures that could be used by the members in attaining their goals. Workgroups of staff from within the OTC members were established to evaluate control measures for specific sectors or issues. Department staff actively participated in these workgroups. Based on a review of 1,000

candidate control measures, the workgroups developed a short list of measures to be considered for more detailed analysis. The technical information for this short list of measures is found in the OTC report: *Identification and Evaluation of Candidate Control Measures, Final Technical Support Document*, prepared by MACTEC Federal Programs, Inc., Herndon, VA, February 28, 2007. Control of NOx emissions from glass melting furnaces in the six states within the OTR that have glass melting furnaces (this Commonwealth, MA, MD, NJ, NY and RI) was on the short list as a measure for further analysis by the workgroups. The workgroups reviewed information on current NOx emissions from the furnaces, controls already in place on the furnaces, anticipated additional NOx emissions reductions from the control measures, preliminary cost and cost-effectiveness data, and other implementation issues. The workgroups discussed all the candidate control measures, including controlling NOx emissions from glass melting furnaces, during a series of conference calls and workshops to further refine the emission reduction estimates, the cost data and implementation issues.

The workgroups also discussed comments from stakeholders, including glass melting furnace stakeholders (North American Insulation Manufacturers Association and Glass Association of North America). The OTC Commissioners summarized the glass melting furnace control measures and made a recommendation at the Commissioners' meetings in 2006 that the affected member states consider NOx emission reductions from glass melting furnaces. The glass melting furnace stakeholders were provided multiple opportunities to review and comment on the glass melting furnace control measures summary. Public meetings were held as an opportunity for stakeholders to review and respond to the Commissioners' recommendations, stakeholders provided written comments, and the workgroups conducted conference calls with specific stakeholders to allow the stakeholders to vocalize their concerns directly to state regulatory staff and to discuss the control options. The OTC staff and state workgroups carefully considered the verbal and written comments received during this process.

The OTC's control measures summary recommends that states may allow the owners or operators of glass melting furnaces to propose compliance methods based on California's San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4354 (relating to glass melting furnaces) which allows a "mix of control options to meet specified emission limits." The NOx emission rates recommended in the OTC control measures summary document are the rates specified in the SJVAPCD Rule 4354. The Department reviewed, analyzed and concurred with the OTC's control measures summary document for glass melting furnaces with respect to the individual glass melting furnaces located in this Commonwealth, and determined that proposing a glass melting furnaces regulation based on the SJVAPCD Rule's 4354 mix of control options to meet specified emission limits was the appropriate implementation strategy for a rulemaking to control NOx emissions from this Commonwealth's glass melting furnaces.

This Commonwealth, along with the other affected OTC member states, agreed to establish NOx emission limits and controls for glass melting furnaces that are based on the SJVAPCD Rule 4354 so that there would be a level playing field among the OTC states. The owners and operators of glass melting furnaces in this Commonwealth remain competitive with those states not in the OTC with the option of an alternative compliance schedule contained in the petition process that is provided in subsections 129.304(b) and (c) (relating to emission requirements) of the final-form rulemaking.

The commentator questioned whether imposing the proposed emission requirements in the absence of a Federal deadline will place this Commonwealth's industry at a competitive disadvantage, and suggests the Board should review the situation carefully in conjunction with the OTC to take precautions to insure a level playing field in the industry. The Board proposed the allowable emission requirements as a result of the research conducted by and the recommendations of the OTC. In addition, the Commonwealth also conducted its own independent research and verified the OTC recommendation. Control of NOx emissions from glass melting furnaces in the six states within the OTR that have glass melting furnaces (this Commonwealth, Maryland, Massachusetts, New Jersey, New York and Rhode Island) was identified by the OTC as a control measure for further analysis. Moreover, the owners and operators of glass melting furnaces in this Commonwealth remain competitive with those states not in the OTC with the option of an alternative compliance schedule contained in the petition process that is provided in subsections 129.304(b) and (c) of the final-form rulemaking.

The commentator stated that the proposed rule does not include emission requirements for specialty glass manufacturing, and therefore the proposed rule does not apply to their glass melting furnace since it does not meet the applicability criteria defined in the proposed rule. The Board recognized that furnaces within this Commonwealth that produce a glass product other than the four types listed in the proposed rulemaking (flat, container, fiberglass and pressed and blown) were not adequately considered in the proposed rulemaking. As a result, the Board has added to § 129.304 in the final-form rulemaking an emission limit of 6.0 lbs NOx/ton of glass pulled for any other glass melting furnace that does not produce flat, container, fiberglass or pressed or blown glass products.

The proposed rule's compliance determination section should express NOx in the same units as in the emission requirements section of the proposed rule (lbs/hr vs. lbs NOx/ton glass). The Board disagrees with the commentator. The CEMS' equipment is not designed to sample and report a source's process-derived emissions data, for example, tons of glass pulled at a glass melting furnace. The CEMS equipment samples a 'parts per million' emissions concentration, and then automatically calculates a 'pounds per hour' emissions concentration. When the monitoring data is submitted to the Department every quarter, as required under subsection 129.309(a), the submittal shall include the CEMS monitored data in pounds per hour and the glass production data in tons of glass pulled per day for each furnace.

The commentator stated that the emission requirements compliance date of May 1, 2009, is unreasonable because there is less than a year until this deadline and the proposed rule is not yet final and may not be final before the end of 2008. The Board acknowledges that the proposed rulemaking's compliance date of May 1, 2009, is impractical. Therefore, the final-form rulemaking requires compliance with the NOx emission limits by January 1, 2012.

The commentator stated that this regulation will likely require permitting of air pollution control equipment which reasonably cannot occur by May 1, 2009, and suggests that the regulation's compliance deadline become effective upon the next furnace rebuild, but no sooner than May 1, 2012. The Board agrees with the commentator that the proposed rulemaking's compliance date of May 1, 2009, is impractical. The final-form rulemaking requires compliance with the emission limits by January 1, 2012.

The Independent Regulatory Review Commission (IRRC) commented that the Board should review the practicality of the 2009 compliance deadline, given the uncertainty of the future of the EPA's CAIR allowance program, and questions if other compliance options will be available for providing flexibility to the affected industry. The Board agrees with the commentator. Subsequent to the closing of the public comment period on June 23, 2008, the Department held discussions with the EPA regarding the proposed rulemaking's option to demonstrate compliance with the emission limits through the purchase of CAIR NOx allowances under the EPA's CAIR regulation. The EPA indicated to the Department that the glass melting furnace regulation that would provide a compliance option to purchase CAIR NOx allowances would be problematic as far as approvability by the EPA for the Commonwealth's SIP, because glass melting furnaces are not specifically included in the EPA's CAIR program as a source category able to purchase CAIR NOx allowances to achieve compliance. Therefore, the Board removed from the final-form rulemaking the compliance option to purchase CAIR NOx allowances.

The Senate and House Environmental Committees commented, that it may assist the Department as well as the regulated industry to not base the compliance timeframe on a specific date. The Committees commented that glass melting furnaces could potentially be required by the regulation to be replaced or upgraded prior to the end of their normal life expectancy, which would greatly increase the compliance costs of the regulation, if the regulation contains a specific compliance date. The Committees further commented that they understand several other states permit furnaces to be upgraded after their normal and anticipated life expectancy is exhausted. The Board has modified the final-form rulemaking to provide for a petition process to all glass melting furnace owners and operators under subsection 129.304(b) for an alternative compliance schedule, if they will be unable to meet the emission limits beginning January 1, 2012. The Board believes that a final compliance date specified in the regulation is necessary to ensure that the owners and operators of the glass melting furnaces in this Commonwealth limit the NOx emissions from their furnaces by a date certain, either by January 1, 2012, or by the date specified on a case-by-case basis as determined through the petition process for an alternative compliance schedule under subsection 129.304(c). Additionally, the SJVAPCD Rule whose NOx emission limits and compliance methods were recommended by the OTC control measures group, specifies a final compliance date.

A commentator stated that the proposed rule limits the purchase of allowances to CAIR NOx allowances, and should allow for the use of NOx credits previously banked as a result of prior emission reductions. The Board disagrees with the commentator. The use of NOx credits previously banked due to prior emission reductions is clarified in the Department's NOx Budget Trading Program under subsection 145.90(a) (relating to emission reduction credit provisions): "ERCs may not be used to satisfy NOx allowance requirements." Further, as explained above, the final-form regulation no longer provides the compliance option to purchase CAIR NOx allowances.

A commentator stated that the Board did not adequately address, while drafting and promulgating the proposed regulation and in accordance with Executive Order 1996-1, that when there are existing Federal regulations covering the subject matter as does the EPA's CAIR regulation, that the State's regulations cannot be more stringent than the Federal standards. The commentator stated further that the EPA promulgated CAIR for the control of NOx emissions at the Federal level, and the EPA focused the CAIR regulation on electric generating units (EGUs).

Glass melting furnaces are not EGUs, thus under the EPA's CAIR, specific regulation of glass manufacturing is notably absent. The purpose of the Department's rulemaking is to address reductions of NOx from glass melting furnaces, while the EPA's CAIR addresses NOx reductions from EGUs, certain boilers, stationary combustion turbines and stationary internal combustion engines. Therefore, these are two different regulatory strategies with the goal of reducing NOx emissions from various source types within this Commonwealth. The EPA did not intend CAIR to comprise the entire solution to control NOx emissions from all types of sources, but only to address interstate transport of ozone and PM2.5 precursors from the EGU sector. In fact, this Commonwealth and other OTC members have determined that additional NOx reductions may be necessary in some areas, in combination with reduction of interstate transport, to attain and maintain the NAAQS. Executive Order 1996-1 applies to the final-form rulemaking since there is not a companion Federal rule that reduces NOx emissions from glass melting furnaces. However, this final rulemaking is reasonably necessary to attain and maintain the 8-hour ozone and PM2.5 NAAQS. The criteria for adopting state regulations more stringent than Federal regulations (when Federal regulations exist) are in the APCA, Section 4.2 (35 P.S. § 4004.2). Section 4.2 of the APCA authorizes the Board to adopt regulations more stringent than Federal requirements when the control measures are reasonably necessary to attain and maintain the ambient air quality standards.

The Senate Committee commented on the ability of the Board to move forward with the regulation if the D.C. Court vacated the CAIR budget and allowance system for NOx emissions in Pennsylvania and other states. Their concern is that on July 11, 2008, the U.S. Court of Appeals for the District of Columbia overturned CAIR, and specifically that the Court found that the state NOx budgets as determined by the EPA were "arbitrary and capricious." The decision by the D.C. Circuit Court in *North Carolina v. EPA* only addressed CAIR, and did not address NOx emission limits for glass melting furnaces.

The IRRC questioned the Board's statutory authority for the use of CAIR NOx allowances and revised NOx emission limits in the proposed regulation due to the fact that the EPA's CAIR was vacated on July 11, 2008, by the D.C. Circuit Court. The IRRC goes on to say that the Court in its ruling stated that the analysis done by the EPA was "fundamentally flawed" and that the agency (EPA) must start its analysis anew. The Board disagrees with this analysis. The decision by the D.C. Circuit Court in *North Carolina v. EPA* only addressed CAIR, and did not address NOx emission limits for glass melting furnaces. The court decided to remand, not vacate, the EPA's CAIR in December 2008. The final Federal rule, expected in 2011, must be revised to be consistent with the Court's July 11, 2008, decision in *State of North Carolina v. Environmental Protection Agency*, 531 F.3d 896 (D.C. Cir. 2008). The Board agrees that while the EPA's CAIR remains in place at this time, the EPA will propose and finalize a replacement for CAIR that meets the criteria set forth by the court. In light of the SIP-approvability issues raised by the EPA, the compliance option to purchase and surrender CAIR NOx allowances was deleted from the final-form regulation.

The IRRC stated that the Board should address the concerns raised by the Senate Committee on the CAIR vacatur, and suggested that if the regulation requires substantial changes, to consider submitting an ANFR or publishing the changes as a new proposed regulation in the *Pennsylvania Bulletin*. The Department agrees with the commentator. The provisions of the final-form rulemaking contain significant changes from the provisions of the proposed rulemaking. Most importantly, during discussions with the

EPA following the close of the Board's public comment period for the proposed rulemaking, the EPA indicated to the Department that a final glass melting furnace regulation that provides a compliance option to purchase CAIR NOx allowances would be problematic as far as approvability by the EPA for the Commonwealth's SIP, because glass melting furnaces are not specifically included in the EPA's CAIR program as a source category able to purchase allowances to achieve compliance. The EPA did not intend CAIR to comprise the entire solution to control NOx emissions from all types of sources, but only to address interstate transport of ozone and PM2.5 precursors from the EGU sector. Therefore, the Board removed from the final-form rulemaking the compliance option to purchase CAIR NOx allowances. The Board further revised the final-form rulemaking to require compliance with the NOx emission limits year-round because NOx is not only a precursor to ozone formation, but is also a precursor to the formation of PM2.5, which is monitored year-round. In addition, the proposed rulemaking addressed control of NOx emissions from glass melting furnaces only during the period of May 1 to September 30 of each year, and it is anticipated that the EPA will extend the ozone monitoring season in this Commonwealth to go from March 1 to October 31, each year, requiring monitoring for the 8-hour ozone NAAQS for a longer period each year. See 74 FR 34525 at p. 34538 (July 16, 2009). The Board also added a NOx emission limit applicable to a glass melting furnace that produces a glass product that is other than flat, container, fiberglass or pressed and blown. These changes are sufficiently significant that the Board believed further discussion and an additional comment period served the public interest. An ANFR to solicit comments from the public on the draft final-form regulation was published in the *Pennsylvania Bulletin* on September 12, 2009 (39 *Pa.B.* 5318).

The Senate Committee commented that they support the concept of NOx allowance trading, and would favor removing the requirement for being "under common control of the same owner or operator in this Commonwealth" from the system-wide averaging section of the rulemaking, and the IRRC commented that the Board should address this issue. The Board disagrees. Allowing multiple owners and operators of glass melting furnaces in this Commonwealth to average their emissions in concert with each other in order to demonstrate compliance would essentially provide them the larger framework of an emissions trading program, which is beyond the scope of the final-form rulemaking provision to provide them with an emissions averaging option.

One commentator stated that the proposed rule's requirement to install a NOx emissions monitoring system (CEMS or an alternate) does not impose a time requirement upon the Department for the review and approval of the monitoring system. The Board disagrees with the commentator that the regulation should contain a time requirement. The timeframe to review and approve a monitoring system is coordinated with each individual company during the certification process of the monitoring system, in accordance with the Department's Continuous Source Monitoring Manual (DEP 274-0300-001). These monitoring-specific issues are not part of individual rulemakings.

Some commentators stated that the deadline of May 1, 2009, for the system to be installed and operational is unreasonable as there is less than a year until this deadline, and that it does not provide adequate time allowed for installation and operation of the CEMS. The commentators suggest there should be a longer timeframe for the system to be installed and operational, and suggest that May 1, 2010, should be the earliest implementation date for the

CEMS. The Board agrees with the commentators. A CEMS or alternate monitoring system or method to determine compliance with the emission limits specified in subsection 129.304(a) in the final-form rulemaking must be installed, operating and maintained no later than 14 days prior to the applicable date by which a glass melting furnace is required to meet the emission limits specified in subsection 129.304(b) or (c) in the final-form rulemaking.

A commentator stated that "to be consistent with the requirements of the CAIR, CEMS installation should be reserved for furnaces undergoing reconstruction or modification and not simple rebricking." The Board disagrees with the commentator. The EPA's CAIR requirements are not applicable to this rulemaking. In addition, a CEMS or alternate monitoring system or method to determine compliance with the emission limits specified in subsection 129.304(a) in the final-form rulemaking must be installed, operating and maintained no later than 14 days prior to the date by which a glass melting furnace is required to meet the emission limits specified in subsection 129.304(b) or (c) in the final-form rulemaking.

One commentator stated that the 'alternate NOx emissions monitoring system or method' referenced in the proposed rule should be further clarified to explain what is an allowable alternate system. The Board disagrees with the commentator. An alternate NOx emissions system or method is not designed to be a prescribed method or system.

A commentator stated that the start-up exemption time of 104 days for a flat glass furnace is too short, and suggests an additional 208 days be allowed for a flat glass furnace that uses a NOx control not readily available from a commercial supplier, not in common use, or that is innovative. The Board agrees with the commentator with respect to the start-up exemption time of 104 days for a flat glass furnace. To be consistent with the SJVAPCD Rule 4354, on whose NOx emission limits the OTC based its recommendations to its member states with glass melting furnaces, the final-form rulemaking revised the length of the start-up exemption in subsection 129.305(d) for all types of glass furnaces. For flat glass furnaces, the maximum start-up exemption time is 208 days if the NOx control system is not in common use or is not readily available from a commercial supplier.

The commentator stated that the 'not to exceed 5% excess oxygen' restriction during a furnace combustion start-up should be eliminated, as it does not appear to have a relationship or a benefit to NOx emissions. The Board retains in the final-form rulemaking the furnace start-up restriction under subsection 129.305(f) of 'not to exceed 5% excess oxygen,' which is consistent with the furnace start-up requirements in the SJVAPCD Rule 4354.

The Senate and House Environmental Committees commented to the Board on behalf of one commentator that the start-up exemption unnecessarily restricts the exemption to a new furnace or furnace rebuild and does not account for an idled existing furnace, and implies that a plan approval would be required in connection with a furnace start-up, which is not necessarily the case. The Board has revised this section of the final-form rulemaking. Subsection 129.305(b) specifies that a plan approval application for a furnace start-up exemption request shall be submitted 'if required,' in recognition that some furnace start-ups may not require a plan approval.

The NOx proposal should adopt the 2007 National Emissions Standards for Hazardous Air Pollutants (NESHAP) definition of "glass melting furnace" instead of using the outdated

1980 New Source Performance Standard (NSPS) definition. The NSPS definition includes a list of extraneous non-furnace equipment that goes against the intent of the proposed rule that requires monitoring NOx emissions from only the furnace. The Board agrees with the commentator. The final-form rulemaking has adopted the 2007 NESHAP definition of the term "glass melting furnace" that was published in the Federal Register on December 26, 2007 (72 FR 73183).

The definition of 'furnace rebuild' is unclear and appears to broaden the scope of repair activities that currently require permitting, and the definition should exclude rebricking activities as defined in 40 CFR Subpart CC and likewise exclude those activities from permitting. The term "complete reconstruction" in the furnace rebuild definition should be stated as "reconstruction." The Board agrees and made the necessary changes.

The Senate and House Committees commented to the Board that the definition of the term "start-up" should be revised to be consistent with the San Joaquin rule to include necessary language on furnace stabilization, that is, the phrase "and systems and instrumentation are brought to stabilization." The Board agrees with the commentator. The definition of the term "start-up" proposed under § 121.1 has been revised.

The proposed regulation should not expand the scope of what currently triggers permitting or plan approvals specified in the *Pennsylvania Code* and existing Federal regulations, and exemptions should be included for furnace rebricking and repairs or replacements that do not constitute a modification. The final-form rulemaking will require compliance with the NOx emission limits by January 1, 2012. The plan approval issued for the construction of a new glass melting furnace or furnace modification shall include terms and conditions consistent with the requirements of 25 *Pa. Code*, Chapter 127, Subchapter B (relating to plan approval requirements). The Board has added in the final-form rulemaking under § 121.1 a definition for the term "cold shutdown," and the rulemaking includes the term "scheduled" whenever the term "cold shutdown" is used within the final-form rulemaking to distinguish between furnace repair activities and a scheduled "cold shutdown" when the furnace is cold and does not contain molten glass. The Board believes this will alleviate the concerns about routine repairs to a furnace.

The SCR and SNCR add-on control technologies for glass furnaces are not technically feasible control technologies for the intermittent NOx emissions from nitrate decomposition, and therefore are not feasible add-on controls for this commentator's glass melting furnace facility. This commentator requests the Board to explicitly exclude its facility from the proposed rule. The Board disagrees with the commentator. The Board recognized that furnaces within this Commonwealth that produce a glass product other than the four types listed in the proposed rulemaking (flat, container, fiberglass and pressed and blown) were not adequately considered in the proposed rulemaking. As a result, the Board added under § 129.304 in the final-form rulemaking an emission limit of 6.0 lbs NOx/ton of glass pulled for any other glass melting furnace that does not produce flat, container, fiberglass or pressed and blown glass products. The Board, in researching and analyzing these types of furnaces within this Commonwealth, considered the limit of 6.0 lbs NOx/ton of glass pulled to be a reasonable limit based on the low NOx burner technology that is available to reduce uncontrolled NOx emissions by 30-35%.

The proposed rule is directed at combustion sources of NOx, and the rule's intent is to limit emissions of thermal NOx. Since 95% of this commentator's NOx emissions are from decomposition of nitrogen-containing raw materials and not from thermal NOx combustion processes, the Board should clarify that it is inappropriate to apply the proposed rule to them. The Board disagrees with the commentator. The purpose of the proposed rulemaking is to control NOx emissions from glass melting furnaces. Applicability § 129.302 of the final-form rulemaking clearly states that the provisions of the rulemaking apply to an owner or operator of a glass melting furnace that emits or has the potential to emit NOx at a rate greater than 50 tons per year. If a glass melting furnace in this Commonwealth meets the applicability criteria, the final-form rulemaking provisions would apply.

The Senate and House Environmental Committees and another commentator questioned the legal authority of the Department and the Board to require glass melting facilities to significantly reduce NOx emissions under the authority of the Pennsylvania APCA, 35 P.S. §§ 4001-4015. The commentators also stated that there is no legal basis to require significant reductions in NOx emissions when it can be demonstrated that their facility does not contribute to the failure of any nonattainment area to comply with the air quality standards for ozone. The Board disagrees with the commentators. The Board has the legal authority to require the owners and operators of glass melting furnaces to limit their emissions of NOx. The law in this Commonwealth is well-settled regarding whether a regulation is valid and binding. A court must evaluate if the regulation is (1) within the agency's granted power, (2) issued pursuant to proper procedures and (3) reasonable. See for example, *Rohrbaugh v. PUC*, 556 Pa. 199, 727 A.2d 1080 (1999); and *Housing Authority v. Pa. Civil Service Com'n*, 556 Pa, 621, 730 A.2d 935 (1999). Section 5 of the APCA provides that the Board shall adopt rules and regulations, for the prevention, control, reduction and abatement of air pollution, applicable throughout the Commonwealth. Clearly the intent of this regulation is to reduce air pollution, and so therefore the Board has the requisite legal authority. The Board is proceeding with this rulemaking through the proper rulemaking procedures, as identified under the APCA, the Regulatory Review Act and the Commonwealth Documents Law. An environmental regulation is reasonable if it prevents the possibility of pollution (see *Department of Environmental Resources v. Metzger*, 347 A.2d 743 (Pa. Cmwlth. 1975)), protects the public health and safety (see *Chambers Development Company, Inc. v. Department of Environmental Resources*, 545 A.2d 404 (Pa. Cmwlth. 1988)), or reduces pollution (see *Rochez Bros., Inc. v. Department of Environmental Resources*, 334 A.2d 790 (Pa. Cmwlth. 1975)). Since this rulemaking reduces pollution, it is reasonable.

Further, a demonstration using air dispersion modeling (point-source or regional scale) to show that a single facility "does not contribute to the failure of any nonattainment area to comply with the air quality standards for ozone" is not the determination of whether a facility is subject to a proposed rulemaking. Air dispersion models are not designed to simulate source specific contributions to ozone nonattainment areas. A finding that emission reductions at one source of NOx does not contribute to the failure of any nonattainment area to comply with the air quality standards for ozone is not surprising. Sensitivity analyses have often shown that the Community Multiscale Air Quality (CMAQ) model used by states for attainment demonstrations is relatively "stiff" considering even large emission changes; that is, the model may not predict large changes in ozone concentrations even when large emission reductions are made. Therefore, a variance relying on modeling would be inappropriate. Moreover, the OTC undertook a study to identify a suite of control measures that could be used by the members as part of a regional effort to

attain and maintain the 1997 NAAQS for ozone. The NOx emissions reductions from glass melting furnaces are a necessary component in this regional strategy.

The Senate and House Environmental Committees and another commentator stated that the proposed rule should provide for a variance if it could be demonstrated that it is economically unreasonable for the glass melting furnace facility to comply with the requirements of the rule, that the public interest is best served by granting the variance, and that the current operations at the glass melting furnace facility have no significant adverse impact on atmospheric NOx concentrations and do not affect the Commonwealth's 8-hour ozone demonstration. The Board disagrees with the commentator. The Department disagrees with the commentator. A demonstration using air dispersion modeling (point-source or regional scale) to show that a single facility "does not contribute to the failure of any nonattainment area to comply with the air quality standards for ozone" is not the determination of whether a facility is subject to a proposed rulemaking. Moreover, a finding that emission reductions at one source of NOx does not contribute to the failure of any nonattainment area to comply with the air quality standards for ozone is not surprising. Sensitivity analyses have often shown that the Community Multiscale Air Quality (CMAQ) model used by states for attainment demonstrations is relatively "stiff" considering even large emission changes; that is, the model may not predict large changes in ozone concentrations even when large emission reductions are made. Therefore, a variance relying on modeling would be inappropriate. Certain areas of this Commonwealth continue to exceed the health-based 1997 8-hour NAAQS for ozone. See 62 FR 38855 (July 18, 1997). The final-form rulemaking to control NOx emissions from glass melting furnaces will result in additional NOx emission reductions that are necessary to support attaining and maintaining the health-based 1997 8-hour ozone NAAQS in this Commonwealth and downwind areas. Furthermore, on March 12, 2008, the EPA issued a more protective 8-hour ozone standard of 75 ppb that would require additional reductions of ozone precursor emissions, including NOx, that impact ozone attainment in this Commonwealth and throughout the OTR. See 73 FR 16436 (March 27, 2008). However, the EPA has reconsidered the 2008 ozone NAAQS and on January 19, 2010, published a proposed rulemaking to set a more protective 8-hour primary standard at a lower level within the range of 0.060-0.070 ppm; the final revised ozone standard is expected in August 2010. See 75 FR 2938. If, as is widely expected, the EPA tightens the ozone standard, the additional NOx emissions from the final-form rulemaking for glass melting furnaces will be even more important than if the current ozone standard remains in place.

This final-form rulemaking will also contribute to reduced formation of PM2.5 and regional haze. The EPA, in its "Clean Air Fine Particle Implementation Rule," determined that NOx emissions are also precursors to the formation of PM2.5. See 72 FR 20586 (April 25, 2007). In November 2009, the EPA designated 6 areas (all or part of 22 counties) in this Commonwealth as not attaining the 2006 24-hour PM2.5 NAAQS. See 74 FR 58688 (November 13, 2009). Regional haze is visibility impairment that is produced by a multitude of sources and activities which emit fine particles and their precursors, including NOx, and which are located across a broad geographic area. See 64 FR 35713 at p.35715 (July 1, 1999). Therefore, the adoption of the final-form rulemaking for glass melting furnaces will help to reduce formation of ozone, PM2.5 and regional haze in this Commonwealth and downwind. As a result, the regulation is reasonably necessary to attain and maintain the NAAQS for ozone and PM2.5.

A commentator stated that the Board did not adequately address, while drafting and promulgating the proposed regulation and in accordance with Executive Order 1996-1, whether

the costs of the regulation exceed its benefits or not, and also that the proposed rulemaking does not support a conclusion that its costs will not exceed the benefits, and therefore the cost/benefit analysis should be more thoroughly addressed. The Board disagrees with the commentator. The Board addressed the benefits and the costs associated with the proposed rulemaking in the preamble to the proposed rulemaking's public notice published in the *Pennsylvania Bulletin* on April 19, 2008 (38 *Pa.B.* 1831).

The Senate and House Environmental Committees commented to the Board on behalf of PPG Industries during the ANFR comment period that an exemption from the emission limits should be included for glass melting furnaces during "periods of upset or malfunction" that affect an emission control device. The Board believes that an exemption for a furnace malfunction or upset period is not required. The Department does not routinely provide for exemptions from emission limits from a source for periods of upset or malfunction in regulations to control emissions from sources.

The Senate and House Environmental Committees commented to the Board on behalf of PPG Industries during the ANFR comment period that the petition process described in subsections 129.304(b) and (c) of the ANFR final-form rulemaking should specify what factors the Department will consider in order for a glass melting furnace to qualify for an alternative compliance deadline. The Board believes the petition process contained in subsections 129.304(b) and (c) of the final-form rulemaking is comprehensive but not overly prescriptive and includes all the factors suggested by the Committees. In addition, the Board revised this section in the final-form rulemaking to require submittal, and not approval, of a petition request to the Department by January 1, 2012, and not by January 1, 2011.

Comments and Responses on the Advance Notice of Final Rulemaking

As previously noted, an ANFR was published in the *Pennsylvania Bulletin* on September 12, 2009 (39 *Pa.B.* 5318). The comment period closed on October 14, 2009. The draft final-form rulemaking contained significant changes in several areas, and the Department believed that while not legally required, further discussion and an additional comment period would serve the public interest. The most significant change made to the draft final-form rulemaking concerned the NOx surrender compliance option under subsection 129.309(c) which allowed for the purchase of CAIR NOx allowances. Three additional significant changes were made to the draft final-form rulemaking related to: 1) year-round compliance; 2) an additional NOx emission limit applicable to the owner or operator of a glass melting furnace that produces a glass product that is other than flat, container, fiberglass, or pressed or blown; and 3) a petition process for an alternative compliance deadline for the owner or operator of a glass melting furnace that demonstrates it is economically or technologically infeasible to meet the January 1, 2012, compliance deadline, and a petition process for an alternative emission limitation for the owner or operator of a glass melting furnace that produces a glass product that is other than flat, container, fiberglass, or pressed or blown.

Seventeen commentators submitted comments on the ANFR: the Senate and the House Environmental Resources and Energy Committees (Committees); the Allegheny County Health Department (ACHD); two organizations; three legislators; and eight glass companies.

A commentator supports the adoption of the NOx emission limits for fiberglass plants consistent with the 4.0 lbs NOx/ton of glass pulled adopted by the OTC. The Department appreciates the commentator's support of the draft final-rulemaking for fiberglass plants. The Department agrees with the commentator that the OTC-recommended emission limit of 4.0 lb NOx/ton of glass pulled for fiberglass plants in the final-form rulemaking achieves consistency and uniformity among the 13 members of the OTC, and that the emission limit for fiberglass furnaces can be achieved with technologies currently available.

The commentator stated that it is an arbitrary and capricious action to base the regulation's proposed NOx emission limits on a California rule without an explanation as to why they are appropriate to the Commonwealth. The Department proposed the allowable NOx emission requirements as a result of the research conducted by and the recommendations of the Northeast OTC. The Northeast OTC is a multi-state organization created under Section 184 of the CAA. 42 U.S.C.A. § 7511c. The OTC is responsible for advising the EPA on ground-level ozone pollution transport issues and for developing and implementing regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic regions. The members of the OTC (this Commonwealth, CT, DE, MA, MD, ME, NH, NJ, NY, RI, VA and VT, and the District of Columbia) are required to demonstrate attainment with the 1997 8-hour ozone standard of 80 ppb. See 62 FR 38855 (July 18, 1997).

Additionally, on March 12, 2008, the EPA issued a more protective 8-hour ozone standard of 75 ppb that would require additional reductions of ozone precursor emissions. See 73 FR 16436 (March 27, 2008). The 2008 revised standard would require additional reductions of emissions of ozone precursors, including NOx, that impact each member's nonattainment status. As required by the Federal Clean Air Act (CAA), the Commonwealth submitted recommendations to the EPA in 2009 to designate 29 counties as nonattainment for the 2008 8-hour ozone NAAQS. The EPA was expected to take final action on the designation recommendations by March 2010. However, the EPA has reconsidered the 2008 ozone NAAQS and on January 19, 2010, published a proposed rulemaking to set a more protective 8-hour primary standard at a lower level within the range of 0.060-0.070 ppm; the final revised ozone standard is expected in August 2010. See 75 FR 2938. If, as is widely expected, the EPA tightens the ozone standard, the additional NOx emissions from the final-form rulemaking for glass melting furnaces will be even more important than if the current 2008 ozone standard remains in place. In addition, Northeast states are conducting attainment planning work to support development of PM2.5 and regional haze SIPs to satisfy obligations under the CAA and regulations issued under the CAA. See 74 FR 58688 (November 13, 2009) and 64 FR 35714 (July 1, 1999). NOx emissions are precursors to the development of PM2.5 and regional haze.

The OTC undertook a study to identify a suite of additional control measures that could be used by the members in attaining their goals. Workgroups of staff from within the OTC members were established to evaluate control measures for specific sectors or issues. Department staff actively participated in these workgroups. Based on a review of 1,000 candidate control measures, the workgroups developed a short list of measures to be considered for more detailed analysis. The technical information for this short list of measures is found in the OTC report: *Identification and Evaluation of Candidate Control Measures, Final Technical Support Document*, prepared by MACTEC Federal Programs, Inc., Herndon, VA, February 28, 2007. Control of NOx emissions from glass melting furnaces in the six states within the OTR that have glass melting furnaces (this Commonwealth, MA, MD, NJ, NY and RI) was on the

short list as a measure for further analysis by the workgroups. The workgroups reviewed information on current NOx emissions from the furnaces, controls already in place on the furnaces, anticipated additional NOx emissions reductions from the control measures, preliminary cost and cost-effectiveness data, and other implementation issues. The workgroups discussed all the candidate control measures, including controlling NOx emissions from glass melting furnaces, during a series of conference calls and workshops to further refine the emission reduction estimates, the cost data and implementation issues.

The workgroups also discussed comments from stakeholders, including glass melting furnace stakeholders (North American Insulation Manufacturers Association and Glass Association of North America). The OTC Commissioners summarized the glass melting furnace control measures and made a recommendation at the Commissioners' meetings in 2006 that the affected member states consider NOx emission reductions from glass melting furnaces. The glass melting furnace stakeholders were provided multiple opportunities to review and comment on the glass melting furnace control measures summary. Public meetings were held as an opportunity for stakeholders to review and respond to the Commissioners' recommendations, stakeholders provided written comments, and the workgroups conducted conference calls with specific stakeholders to allow the stakeholders to vocalize their concerns directly to state regulatory staff and to discuss the control options. The OTC staff and state workgroups carefully considered the verbal and written comments received during this process.

The OTC's control measures summary recommends that states may allow the owners or operators of glass melting furnaces to propose compliance methods based on California's San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4354 (relating to glass melting furnaces) which allows a "mix of control options to meet specified emission limits." The NOx emission rates recommended in the OTC control measures summary document are the rates specified in the SJVAPCD Rule 4354. The Department reviewed, analyzed and concurred with the OTC's control measures summary document for glass melting furnaces with respect to the individual glass melting furnaces located in this Commonwealth, and determined that proposing a glass melting furnaces regulation based on the SJVAPCD Rule's 4354 mix of control options to meet specified emission limits was the appropriate implementation strategy for a rulemaking to control NOx emissions from this Commonwealth's glass melting furnaces.

This Commonwealth, along with the other affected OTC member states, agreed to establish NOx emission limits and controls for glass melting furnaces that are based on the SJVAPCD Rule 4354 so that there would be a level playing field among the OTC states. The owners and operators of glass melting furnaces in this Commonwealth remain competitive with those states not in the OTC with the option of an alternative compliance schedule contained in the petition process that is provided in subsections 129.304(b) and (c) (relating to emission requirements) of the final-form rulemaking.

A commentator requests that the Department add to the final-form rulemaking a definitive and feasible alternate standard or exemption applicable to unique specialty glass operations such as theirs. The Department recognized that furnaces within this Commonwealth that produce a glass product other than the four types listed in the proposed rulemaking (flat, container, fiberglass and pressed and blown) were not adequately considered in the proposed rulemaking. The furnaces that produce a glass product other than flat, container, fiberglass or pressed and blown glass were not considered during the glass melting furnaces control measures

strategy and planning by the OTC, so providing them an alternative emission limitation is also reasonable. As a result, the Department has added under § 129.304 in the final-form rulemaking an emission limit of 6.0 lbs NOx/ton of glass pulled for any other glass melting furnace that does not produce flat, container, fiberglass and pressed and blown glass products.

Several commentators questioned why the draft final-form regulation only provided an alternative emission limitation petition process in subsection 129.304(c) to the owners and operators of glass melting furnaces that produce an "other" glass product. The glass melting furnaces in this Commonwealth that produce an "other" glass product were not considered during the glass melting furnaces control measures strategy and planning within the OTC, so providing them an opportunity to petition the Department for an alternative emission limitation is appropriate and reasonable.

The Senate and House Committees on Environmental Resources and Energy (Committees), several legislators, and other commentators commented that the Department should consider providing a variance procedure or exception from the regulation for a glass melting furnace that definitively demonstrates that its emissions are not materially contributing to the development of ground level ozone. The Department maintains that a demonstration using air dispersion modeling (point-source or regional scale) to show that a single facility "does not contribute to the failure of any nonattainment area to comply with the air quality standards for ozone" is not the determination of whether a facility is subject to a proposed rulemaking. Air dispersion models are not designed to simulate source-specific contributions to ozone nonattainment areas. A finding that emission reductions at one source of NOx does not contribute to the failure of any nonattainment area to comply with the air quality standards for ozone is not surprising. Sensitivity analyses have often shown that the Community Multiscale Air Quality (CMAQ) model used by states for attainment demonstrations is relatively "stiff" considering even large emission changes; that is, the model may not predict large changes in ozone concentrations even when large emission reductions are made. Therefore, a variance relying on modeling would be inappropriate. Moreover, the OTC undertook a study to identify a suite of control measures that could be used by the members as part of a regional effort to attain and maintain the 1997 NAAQS for ozone. The NOx emissions reductions from glass melting furnaces are a necessary component in this regional strategy. Certain areas of this Commonwealth continue to exceed the health-based 1997 8-hour NAAQS for ozone. This final-form rulemaking to control NOx emissions from glass melting furnaces will result in additional NOx emission reductions that are necessary to support attaining and maintaining the health-based 1997 8-hour ozone NAAQS of 80 ppb in this Commonwealth and downwind areas. See 62 FR 38855 (July 18, 1997). Furthermore, on March 12, 2008, the EPA issued a more protective 8-hour ozone standard of 75 ppb that would require additional reductions of ozone precursor emissions, including NOx, that impact each OTR member's nonattainment status. See 73 FR 16436 (March 27, 2008). However, the EPA has reconsidered the 2008 ozone NAAQS and on January 19, 2010, published a proposed rulemaking to set a more protective 8-hour primary standard at a lower level within the range of 0.060-0.070 ppm; the final revised ozone standard is expected in August 2010. See 75 FR 2938. If, as is widely expected, the EPA tightens the ozone standard, the additional NOx emissions from the final-form rulemaking for glass melting furnaces will be even more important than if the current 2008 ozone standard remains in place.

This final-form rulemaking will also reduce concentrations of PM2.5 and the formation of regional haze. The EPA, in its "Clean Air Fine Particle Implementation Rule," determined that NOx emissions are also precursors to the formation of PM2.5. See 72 FR 20586 (April 25, 2007). Additionally, in November 2009, the EPA designated six areas (all or part of 22 counties) in this Commonwealth as not attaining the 2006 24-hour PM2.5 NAAQS. See 74 FR 58688 (November 13, 2009). The EPA is also evaluating the adequacy of the 2006 PM2.5 NAAQS as part of its periodic review required under Section 109(d)(1) of the CAA. 42 U.S.C.A. § 7409(d)(1). Furthermore, when initially adopting the visibility protection provisions of the 1977 Clean Air Act Amendments, Congress specifically recognized that the "visibility problem is caused primarily by emission into the atmosphere of SO_2, oxides of nitrogen, and particulate matter, especially fine particulate matter, from inadequate[ly] controlled sources." See 64 FR 35713 at p.35715 (July 1, 1999). Section 169A(a)(1) of the CAA sets forth a National goal for visibility which is the "prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution." 42 U.S.C.A. § 7491(a)(1). If adopted, the NOx emission reduction provisions of the final-form rulemaking for glass melting furnaces will help to reduce formation of ozone, PM2.5 and regional haze pollution in this Commonwealth and throughout the OTR. As a result, the regulation is reasonably necessary to attain and maintain the NAAQS for ozone and PM2.5

A primary comment made by numerous commentators, including the Committees, is that in order to avoid possible economic disruption to the operations at the affected furnaces, the Department should allow an existing furnace to operate through its full life cycle before requiring it to be replaced or rebuilt with control technology in order to meet the regulation's NOx emission limits. The commentators suggest that it may assist the Department as well as the regulated industry to not base the compliance timeframe on a specific date. The commentators also state that other states permit furnaces to be upgraded after their normal and anticipated life expectancy has been exhausted. The Department disagrees with the commentators. The Department agrees that it could possibly be infeasible for all affected owners or operators of glass melting furnaces to comply with the allowable emission limits by January 1, 2012. In recognition of this, subsection 129.304(b) in the final-form rulemaking provides a process to all glass melting furnace owners and operators to petition the Department for an alternative compliance schedule if they will be unable to meet the emission limits beginning January 1, 2012. The Department believes that a final compliance date specified in the regulation is necessary to ensure that the owners and operators of the glass melting furnaces in this Commonwealth limit the NOx emissions from their furnaces by a date certain, either by January 1, 2012, or by the date specified on a case-by-case basis as determined through the petition process for an alternative compliance schedule under subsection 129.304(c). Moreover, the EPA would not approve revisions to the California SIP contained in the SJVAPCD rule addressing NOx emissions from glass melting furnaces, because the Compliance Schedule section of the rule did not specify a final date for facilities to achieve full compliance with the emission limits specified in the rule's Requirements section. See 67 FR 20078 (April 24, 2002). As a result, the Department believes that a final compliance date specified in the final-form regulation is necessary to receive SIP approval from the EPA.

Several commentators commented that the petition process described in subsections 129.304(b) and (c) of the draft final rulemaking should specify what factors the Department will consider in order for the owner or operator of a glass melting furnace to qualify for an alternative compliance deadline. The Department believes the petition process contained in subsections

129.304(b) and (c) is comprehensive but not overly prescriptive and includes all the factors suggested by the commentators. In addition, the Department has revised this section in the final-form rulemaking to require submittal of a petition request to, and not approval by, the Department by January 1, 2012, rather than approval by January 1, 2011. The Department maintains that the concerns expressed by the commentators regarding the petition process will be alleviated by the change to the final-form regulation that requires submittal of the petition by January 1, 2012, and does not require approval of the petition by January 1, 2011.

A comment was made requesting that the short-term applicability criteria for a furnace that emits NOx at greater than 20 pounds per hour, but otherwise emits below 50 tons per year of NOx, be deleted from the rulemaking. The Department agrees with the commentator in that applying the regulation to these unique glass melting operations will not result in significant overall emission reductions. Section 129.302 in the final-form rulemaking has been revised to include only owners and operators of furnaces that emit NOx at greater than 50 tons per year as subject to the regulation.

The ACHD commented that the final-form rulemaking should be modified to state that the regulation applies to furnaces in the jurisdiction of a local air pollution control agency, and in order for ACHD to implement the provisions of the regulation, all reports and notifications required under the regulation should be submitted directly to the local agency. The Department agrees with the commentator, and the change has been made.

One commentator stated that the exemptions section should be revised to require that the owner or operator of a glass melting furnace notify the Department within 24 hours after the initiation of an exemption operation, instead of within 24 hours prior to initiating the operation, because there are some instances where an unforeseen problem requires a facility to immediately go into an unanticipated idling position. The Department agrees with the commentator, and that change has been made.

One commentator stated that the timing of any written notification to the Department contained in the exemptions Section 129.303 not be tied to the occurrence of the exemption event itself. The Department disagrees with the commentator. The Department maintains that the requirement in subsection 129.303(b) to notify the Department within 24 hours of initiating the exempt operation, and the requirement in subsection 129.303(d) to notify the Department in writing within 24 hours after completion of the exempt operation, is reasonable and not burdensome to the facility claiming the exemption.

Several commentators commented that an exemption from the emission limits should be included for glass melting furnaces during “periods of upset or malfunction” that affect an emission control device. Comments were also made that the routine maintenance exemption of 144 hours in total for add-on emission controls is not long enough to account for the complexities of the control techniques likely to be employed, and that each major component of the control system be exempted from the emission limits for 144 hours each calendar year for routine maintenance. The Department believes that an exemption for a furnace malfunction or upset period is not required. The Department does not routinely provide for exemptions from emission limits for periods of upset or malfunction in regulations to control emissions from sources.

Several commentators commented that the furnace start-up section should be modified to require a plan approval application for a start-up exemption only 'if required,' and not for activities associated with routine repair or maintenance of the furnace. The Department has revised this section of the final-form rulemaking. Subsection 129.305(b) specifies that a plan approval application for a furnace start-up exemption request shall be submitted 'if required,' in recognition that some furnace start-ups may not require a plan approval.

Commentators note that the 'not to exceed 5% excess oxygen' restriction during a furnace combustion start-up should be eliminated, as it does not appear to have a relationship or a benefit to NOx emissions. The Department retains in the final-form rulemaking the furnace start-up restriction in subsection 129.305(f) of 'not to exceed 5% excess oxygen,' which is consistent with the furnace start-up requirements in the SJVAPCD Rule 4354.

Several commentators commented that the definition of the term "start-up" should be revised consistent with the SJVAPCD Rule 4354 to include necessary language on furnace stabilization, that is, the phrase "and systems and instrumentation are brought to stabilization." The Department agrees with the commentators, and that change was made.

Two commentators commented that the definition of the term "rebricking" and the revised definition of the term "furnace rebuild" in the draft final-form rulemaking are confusing, and further comment that they have concern over whether routine repairs to a furnace would be considered a rebuild or rebrick of the furnace. The Department agrees with the commentators, and has deleted both definitions in the final-form rulemaking and has added a definition for the term "cold shutdown," and included the term "scheduled" whenever the term "cold shutdown" is used within the final-form rulemaking to distinguish between furnace repair activities and a scheduled cold shutdown when the furnace is cold and does not contain molten glass.

Several commentators commented that the data substitution method for emissions monitoring in the compliance determination section that requires the highest valid 1-hour emission value during the reporting quarter be substituted for invalidated data is unreasonable and punitive. They comment further that for periods of invalid data, the Department should allow substituting data that is more representative of the actual emissions. The Department agrees with the commentators, and revised the data substitution method in the final-form rulemaking to require the highest valid 1-hour value that occurred under similar source operating conditions during the reporting quarter be substituted for the invalidated data.

Several commentators commented that the requirements in §§ 129.308 and 129.309 to report CEMS data and daily glass production data on a quarterly basis are inconsistent with existing Title V reporting requirements, and create a duplicative and burdensome additional reporting obligation on the regulated community. The Department disagrees with the commentators. The Department does not believe that maintaining records of daily glass production will present a significant inconvenience to any owner or operator. Daily records may be needed to enable the Department to verify the relationship between NOx emissions recorded by CEMS, and glass produced during the compliance period. Records sufficiently precise to quantify glass produced by each glass melting furnace during a reporting quarter are necessary to enable owners and operators to demonstrate compliance. Continuous emission monitoring is the most precise means of determining emissions over extended time periods.

Several commentators requested the Department work with the regulated industry in a transparent manner so that the true benefits and costs of the regulation will be known. The commentators further state that although the Department asserts several times in the preamble to the proposed NOx regulation that reducing NOx emissions will also result in reduced emissions of fine particulate matter, they have not provided the regulated community with data or information that supports this assertion. The Department's commitment to transparency is supported by its decision to publish an ANFR on the draft final-form regulation. The EPA, in its "Clean Air Fine Particle Implementation Rule," determined that NOx emissions are precursors to the formation of PM.2.5. See 72 FR 20586 (April 25, 2007). In November 2009, the EPA designated six areas (all or part of 22 counties) as not attaining the 2006 24-hour PM2.5 NAAQS. See 74 FR 58688 (November 13, 2009). Therefore, the adoption of the final-form rulemaking for glass melting furnaces will help to reduce formation of PM2.5 and is reasonably necessary to attain and maintain the PM2.5 NAAQS.

A commentator stated that the Department did not adequately address, while drafting and promulgating the proposed rulemaking and in accordance with Executive Order 1996-1, whether the costs of the regulation exceed its benefits or not, and also that the proposed rulemaking does not support a conclusion that its costs will not exceed the benefits, and therefore the cost/benefit analysis must be provided. The commentator states further that the Board acknowledges in the ANFR *Pennsylvania Bulletin* notice that the EPA advised the Commonwealth that the EPA's CAIR does not apply to glass melting furnaces, and therefore the draft final-form rulemaking imposes requirements on glass melting furnaces that are more stringent than Federal standards. The Department disagrees with the commentator. The Department addressed the benefits and the costs associated with the proposed rulemaking in the preamble to the proposed rulemaking's public notice published on April 19, 2008, in the *Pennsylvania Bulletin* (38 *Pa. B.* 1831). The purpose of this rulemaking is to address reductions of NOx from glass melting furnaces, while the EPA's CAIR addresses NOx reductions from EGUs, certain boilers, stationary combustion turbines and stationary internal combustion engines. Therefore, these are two different regulatory strategies with the goal of reducing NOx emissions from various source types within this Commonwealth. The EPA did not intend CAIR to comprise the entire solution to control NOx emissions from all types of sources, but only to address interstate transport of ozone and PM2.5 precursors. Moreover, this final-form rulemaking is reasonably necessary to attain and maintain the 8-hour ozone NAAQS.

The commentator states that the EQB acknowledges in the ANFR *Pennsylvania Bulletin* notice that the EPA advised Pennsylvania that CAIR does not apply to glass melting furnaces, and therefore the draft final-form rulemaking imposes requirements on glass melting furnaces that are more stringent than Federal standards. The purpose of the rulemaking is to address reductions of NOx from glass melting furnaces, while the EPA's CAIR addresses NOx reductions from electric generating units, certain boilers, stationary combustion turbines and stationary internal combustion engines. Therefore, these are two different regulatory strategies with the goal of reducing NOx emissions from various source types within this Commonwealth. The EPA did not intend CAIR to comprise the entire solution to control NOx emissions from all types of sources, but only to address interstate transport of ozone and PM2.5 precursors from the electric generating unit sector. In fact, this Commonwealth and other OTC members have determined that additional NOx reductions may be necessary in some areas, in combination with reduction of interstate transport, to attain and maintain the NAAQS. In addition to the PM2.5 NAAQS, this final rulemaking is reasonably necessary to attain and maintain the 1997 8-hour

ozone NAAQS. The criteria for adopting state regulations more stringent than Federal regulations (when Federal regulations exist) are in the Air Pollution Control Act (APCA), Section 4.2 (35 P.S. § 4004.2). Section 4.2 of the APCA authorizes the Board to adopt regulations more stringent than Federal requirements when the control measures are reasonably necessary to attain and maintain the ambient air quality standards.

A commentator commented that the final-form rulemaking violates Section 4.2 of the Pennsylvania APCA, because Section 4.2 restricts the Board to adopting by regulation: "...only those control measures or other requirements which are reasonably required, in accordance with the Clean Air Act deadlines, to achieve and maintain the ambient air quality standards or to satisfy related Clean Air Act requirements..." They further quote Section 4.2: "Control measures or other requirements adopted under subsection (a) of this section shall be no more stringent than those required by the Clean Air Act unless authorized or required by this Act or specifically required by the Clean Air Act." The commentator maintains that NOx emissions from glass melting furnaces are not currently regulated by the EPA, so therefore this rulemaking is prohibited by Section 4.2 since it is more stringent than required by the Clean Air Act. The Department disagrees with the commentator. The Department has the legal authority to require glass melting furnaces to limit their emissions of NOx. The law in this Commonwealth is well-settled regarding whether a regulation is valid and binding. A court must evaluate if the regulation is: (1) within the agency's granted power; (2) issued pursuant to proper procedures; and (3) reasonable. See for example, *Rohrbaugh v. PUC*, 556 Pa. 199, 727 A.2d 1080 (1999); and *Housing Authority v. Pa. Civil Service Com'n*, 556 Pa, 621, 730 A.2d 935 (1999). Section 5 of the APCA provides that the Board shall adopt rules and regulations, for the prevention, control, reduction and abatement of air pollution, applicable throughout the Commonwealth. Clearly the intent of this regulation is to reduce air pollution, and so therefore the Board has the requisite legal authority. The Board is proceeding with this rulemaking through the proper rulemaking procedures, as identified under the APCA, the Regulatory Review Act and the Commonwealth Documents Law. An environmental regulation is reasonable if it prevents the possibility of pollution (see *Department of Environmental Resources v. Metzger*, 347 A.2d 743 (Pa. Cmwlth. 1975)), protects the public health and safety (see *Chambers Development Company, Inc. v. Department of Environmental Resources*, 545 A.2d 404 (Pa. Cmwlth. 1988)), or reduces pollution (see *Rochez Bros., Inc. v. Department of Environmental Resources*, 334 A.2d 790 (Pa. Cmwlth. 1975)). Since this rulemaking reduces pollution it is reasonable.

The commentator indicated the Department should consider development of a pool of surplus NOx "credits" from glass melting furnaces and allow trading and use of these credits by owners and operators of glass melting furnaces to demonstrate compliance with the regulation, in light of the elimination of using CAIR NOx allowances as a compliance option in the draft final-form rulemaking. The Department disagrees with the commentator. Subsequent to the closing of the public comment period on June 23, 2008, the Department held discussions with the EPA regarding the proposed rulemaking's option to demonstrate compliance with the emission limits through the purchase of CAIR NOx allowances under the EPA's CAIR regulation. During those discussions, the EPA indicated to the Department that a glass melting furnace regulation that would provide a compliance option to purchase CAIR NOx allowances would be problematic as far as approvability by the EPA for the Commonwealth's SIP, because glass melting furnaces are not specifically included in the EPA's CAIR program as a source category able to purchase CAIR NOx allowances to achieve compliance. The Department therefore removed from the draft final-form regulation the compliance option to purchase CAIR NOx allowances.

G. Benefits, Costs and Compliance

Benefits

Overall, the citizens of this Commonwealth will benefit from this final-form rulemaking because these amendments will result in improved air quality by reducing ozone and PM2.5 precursor emissions. The final-form rulemaking will also encourage the development of new technologies and practices, which will reduce emissions of NOx.

Compliance Costs

The owners and operators of glass melting furnaces in this Commonwealth will be required to install and operate an emissions monitoring system or equipment necessary for an emissions monitoring method in order to comply with the final-form rulemaking. If an owner or operator elects to install and operate a CEMS, the cost could be as high as $300,000. However, the final-form rulemaking provides for the installation and operation of an alternate emissions monitoring system or method approved by the Department, in writing, which could significantly reduce the monitoring costs. The estimated cost of the alternate emissions monitoring system or method, if elected by an owner or operator of a glass melting furnace, would cost approximately $100,000, and would include any one of a number of alternatives including computer modeling or a predictive emissions monitoring system.

Compliance Assistance Plan

The Department plans to educate and assist the public and regulated community in understanding the newly revised requirements and how to comply with them. This will be accomplished through the Department's ongoing compliance assistance program.

Paperwork Requirements

The proposed regulations will not significantly increase the paperwork that is already generated during the normal course of business operations.

H. Pollution Prevention

The Federal Pollution Prevention Act of 1990 established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance. This final-form rulemaking will provide the owners and operators of all glass melting furnaces the opportunity to improve the energy efficiency of their operations, which will result in lower NOx emissions.

I. Sunset Review

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

J. Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), on April 7, 2008, the Department submitted a copy of the notice of proposed rulemaking, published at 38 *Pa.B.* 1831, and a copy of a Regulatory Analysis Form to the IRRC and to the Chairpersons of the House and Senate Environmental Resources and Energy Committees (Committees) for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the Committees were provided copies of the comments received during the public comment period, as well as other documents when requested. In preparing the final-form rulemaking, the Department has considered all comments from IRRC, the Committees, and the public.

Under section 5.1(j.2) of the Regulatory Review Act, on xxxx, xx, xxxx, this final-form rulemaking was deemed approved by the Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on xxxx, xx, xxxx and approved the final-form rulemaking.

K. Findings of the Board

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§1201 and 1202) and regulations promulgated thereunder at 1 Pa. Code §§ 7.1 and 7.2.

(2) At least a 60-day public comment period was provided as required by law, and all comments were considered.

(3) These regulations do not enlarge the purpose of the proposal published at 38 Pa.B. 1831 (April 19, 2008).

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this order.

(5) These regulations are reasonably necessary to achieve and maintain the ozone and PM2.5 NAAQS.

L. Order of the Board

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department of Environmental Protection, 25 Pa. Code Chapters 121 and 129 are amended by amending § 121.1; and by adding §§ 129.301-129.310 to read as set forth in Annex A.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to the IRRC and the Committees as required by the Regulatory Review Act.

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau, as required by law.

(e) This final-form rulemaking will be submitted to the EPA as an amendment to the Pennsylvania State Implementation Plan.

(e) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

JOHN HANGER
Chairman