Illinois Environmental Protection Agency
Bureau of Air
January 2008

Responsiveness Summary for Public Comments and Questions on the Cogeneration Boiler Project at the United States Steel Granite City Works in Granite City, Illinois

Source Identification No.: 119813AAI
Application No.: 06070023

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DECISION

On January 30, 2008, the Illinois Environmental Protection Agency (Illinois EPA) Bureau of Air issued a permit to United States Steel (US Steel) to construct a Cogeneration Boiler at its Granite City Works, in Granite City, Illinois. At the same time, the Illinois EPA issued this Responsiveness Summary to address questions and comments submitted to the Illinois EPA concerning the proposed issuance of a permit for this project.

BACKGROUND

US Steel submitted an application to the Illinois EPA, Bureau of Air for construction of a cogeneration boiler at its Granite City Works in Granite City. The Granite City Works is an integrated iron and steel mill producing flat rolled steel products.

The proposed boiler would be a "cogeneration" boiler because steam from the boiler would be used both to generate electricity for the mill and in manufacturing processes at the mill. The boiler would be designed to fire blast furnace gas, which is a byproduct from the existing blast furnaces at the mill, as its primarily fuel. This project would also include construction of an additional flare to ensure adequate capacity for flaring of surplus blast furnace gas and a new cooling tower to support the operation of the new boiler. The proposed boiler, which would have a nominal heat input capacity of 505 million Btu per hour, would replace ten smaller boilers, which have an aggregate capacity of 600 million Btu per hour. The existing boilers, which currently burn blast furnace gas, are nearing the end of their useful life. These existing boilers make low-pressure steam, which cannot be efficiently used for cogeneration of electricity.

Another project is also currently proposed for the Granite City Works, i.e., the construction of a heat recovery coke plant by Gateway Energy and Coke Company. The proposed heat recovery coke plant and an associated coke conveyor system proposed by US Steel are not the subject of this Responsiveness Summary. Comments submitted to the Illinois EPA on the draft permits prepared by the Illinois EPA for the coke plant project and associated conveyor system will be addressed in a separate Responsiveness Summary when the Bureau of Air takes action on the permit applications for those facilities.

COMMENT PERIOD AND PUBLIC HEARING

The Illinois EPA, Bureau of Air evaluates applications for permits for proposed sources of emissions. An air pollution control permit application must appropriately address compliance with applicable air pollution control laws and regulations before a permit can be issued. Following its initial technical review of United States Steel's application, the Illinois EPA Bureau of Air made a preliminary determination that the application met the standards for issuance of a construction permit and prepared a draft permit for public review and comment.

1. US Steel requested that the Illinois EPA hold a public hearing on the Cogeneration Boiler Project. The public comment period opened with the publication of a hearing notice in the Granite City Press Record Journal on September 23, 2007. The hearing notice was published again in the Granite City Press Record Journal on September 30 and October 7, 2007. The public hearing was held on November 7, 2007, at the Knights of Columbus Hall in Granite City. The purpose of this public hearing was to accept oral comments into the written hearing record and answer questions about the proposed project. The comment period was originally scheduled to close on December 7, 2007. In response to a request from several environmental organizations, the close of the comment period was extended until December 14, 2007.

AVAILABILITY OF DOCUMENTS

Copies of the construction permit for a Cogeneration Boiler issued to US Steel and this Responsiveness Summary are available by the following means:

1. From the Illinois Permit Database on the Internet:

   www.epa.gov/region5/air/permits/ilonline.htm
   (Find the documents under All Permit Records (sorted by name), Construction Permit Records).

2. By viewing documents at one of the following repositories:

Six Mile Regional Library District 2001 Delmar Avenue Granite City, IL 62040 618/452-6238	Illinois EPA Collinsville Regional Office 2009 Mall Street Collinsville, IL 62234 618/346-5120	Illinois EPA 1021 N. Grand Ave., East Springfield, IL 62794 217/782-7027

3. By contacting the Illinois EPA by telephone, facsimile or electronic mail:

   Illinois EPA
   Bradley Frost, Office of Community Relations Coordinator
   888/372-1996 Toll Free – Environmental Helpline
   217/782-7027 – Desk Line
   217/782-9143 – TDD
   217/524-5023 – Facsimile
   brad.frost@illinois.gov

COMMENTS & QUESTIONS WITH RESPONSES BY THE ILLINOIS EPA

1. Will any of the electricity that’s being generated by the cogeneration facility be moved to the power grid or used outside of the Granite City Works?

The proposed cogeneration facility is being developed for the purpose of supplying electricity, and steam, to the Granite City Works, not to generate electricity to be put on the power grid and sold. This has been clarified in the issued permit. Some sale of electricity to the grid is allowed because there will be periods, especially during shut down or transition of manufacturing operations, when the use of electricity by the Granite City Works will be out of balance with the amount of electricity that is being generated. The excess electrical power during these periods will be directed to the grid for sale until generation again matches the use of electricity by the Granite City Works. The amount of such electricity going to the grid from the cogeneration facility is limited to below the threshold level at which the boiler would be regulated under Illinois' air pollution control rules as an electrical generating unit, i.e., a unit whose main purpose is to supply electrical power to the grid for sale.

2. For emissions of particulate matter$_{2.5}$ ($PM_{2.5}$), the draft permit would not subject the cogeneration boiler project to any of the rigorous emission control and air quality related requirements that apply to a major project under the rules for Nonattainment New Source Review (NA NSR) or Prevention of Significant Deterioration of Air Quality (PSD). This is of critical importance as $PM_{2.5}$ is a pollutant with the potential for significant impacts on and damage to the health of the public.1 The air quality in the Greater Metropolitan St. Louis Area does not currently comply with the applicable National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$ and the highest levels of $PM_{2.5}$ in the area are measured in Granite City, which is no coincidence given the magnitude of the emissions of $PM_{2.5}$ and $PM_{2.5}$ precursors from the Granite City Works.2

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[1] $PM_{2.5}$ is widely recognized as posing significant public health risks, including premature death from heart and lung disease and aggravation of heart and lung diseases, with associated hospital admissions, doctor and emergency room visits, medication use, and school and work absences. High levels of $PM_{2.5}$ in the air can also trigger asthma attacks. $PM_{2.5}$ air quality also possibly has a role in lung cancer, infant mortality, and developmental problems, such as low birth weight in children. Unlike total suspended particulate, which is very effectively filtered out of the air by the upper respiratory system, the small size of $PM_{2.5}$ lets it easily be inhaled deeply into the lungs where it can remain embedded for long periods of time before being absorbed into the bloodstream. Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. To address the potential impacts pf PM2.5 on public health, the USEPA in 2006 revised the short-term NAAQS for PM2.5, lowering it to 35 micrograms per cubic meter, annual average.

[2] In a November 2007 presentation explaining its recommendation to designate the Metro-East region nonattainment for the 24-hour $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS), the Illinois EPA highlighted the Granite City Works as one of the top five sources of $PM_{2.5}$ emissions in the region, as well as one of the top few sources of each of the $PM_{2.5}$ precursors – nitrogen oxides, sulfur dioxide, volatile organic material, and ammonia.

The net increase in emissions of particulate matter for this project is not significant, as shown in Attachment 1 of the issued permit, Accordingly, the project is not a major project for particulate matter and the project's emissions of particulate matter are not subject to the regulatory requirements that would apply if the project were major.

The Illinois EPA shares the concerns expressed by this comment about the current levels of $PM_{2.5}$ air quality in Granite City and the region. However, current $PM_{2.5}$ air quality is being appropriately addressed by activities to lower emissions and come into compliance with the NAAQS for $PM_{2.5}$. These activities are separate from the permitting of the proposed project and must proceed irrespective of the proposed project to bring the area into attainment. In this regard, the health and well-being of the public is generally addressed by the process that starts when an area is designated nonattainment, which requires the State and/or USEPA to take needed measures to reduce emissions, improve air quality, and bring the area into attainment. This process includes a detailed evaluation of the role that different sources and categories of sources have in contributing to nonattainment status, so as to allow a comprehensive set of control measures to be developed that will prove both effective and feasible in achieving the ultimate result of attainment. This detailed evaluation is a critical step in the process, as the contribution of sources to nonattainment status may be affected by their location and influenced by specific sets of meteorological conditions, so that certain reductions in emissions are more effective in actually improving $PM_{2.5}$ air quality. For example, a key action to improve air quality both on a regional basis and throughout the eastern United States has been the adoption of the Clean Air Interstate Rule (CAIR) by USEPA. CAIR addresses the emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) from coal-fired power plants, as SO_2 and NO_x are precursors to the formation of $PM_{2.5}$ in the atmosphere and contribute to background levels of $PM_{2.5}$, most critically in urban areas.

This process to bring an area into attainment, which is triggered by an area being designated nonattainment, does not prohibit the construction of the proposed cogeneration boiler facility. The provisions of the federal Clean Air Act accommodate construction activity in a nonattainment area as economic activity is also important to the well-being of the public. Instead, as observed by this comment, additional requirements are imposed on major projects by the NA NSR rules, which are designed to ensure that a proposed major project will not interfere with the ongoing work to bring the area into attainment. However, this project is not such a major project for emissions of particulate matter. Most notably in this regard, the proposed new cogeneration boiler will take the place of ten existing boilers at the Granite City Works.

3. The emissions of US Steel and other manufacturing sources in Madison County disproportionately affect poor and minority populations who live nearby.

The presence of poor and minority populations in the area, is another reason why the emissions of existing sources need to be reduced as quickly as reasonably practicable to improve air quality and bring the area into

attainment with the NAAQS while also minimizing disruption to the local economy on which area residents also depend.

4. The draft permit would improperly and unlawfully address emissions of $PM_{2.5}$ from the project as if they were PM10. The draft permit, in Attachment 1, indicates that the proposed project will have the potential to emit 232.25 tons per year of "$PM_{10}/PM_{2.5}$," without separately addressing how much $PM_{2.5}$ will be emitted. The draft permit would not set any limits on the project's $PM_{2.5}$ emissions and would not address the various substantive requirements applicable to a major project for a nonattainment pollutant, such as offsets, LAER-based emission limits, an analysis of alternatives, and compliance requirements for US Steel's existing major sources in Illinois. 35 IAC Part 203, Subpart C. Notably, this permit could be Illinois EPA's only opportunity to set LAER limit on PM2.5 emissions from the new cogeneration boiler, flare, and cooling tower.

   In the Project Summary for the draft permit, the Illinois EPA explained that, consistent with USEPA's interim guidance, "…to address whether the project is a major modification under MSSCAM, particulate matter emissions were evaluated in terms of PM_{10} …" Illinois EPA then accepted US Steel's claim that contemporaneous decreases in "$PM_{10}/PM_{2.5}$" emissions netted US Steel out of MSSCAM (i.e., Illinois' NA NSR rules, 35 IAC Part 203, Major Stationary Sources Construction and Modification). Neither US Steel nor Illinois EPA has documented that the particulate matter emissions of the Granite City Works specifically in terms of $PM_{2.5}$ – as opposed to PM_{10} – will be not be significantly higher than pre-project emissions.

The applicability of NA NSR to the proposed project for emissions of particulate matter[3] has been appropriately addressed. As explained in the Project Summary accompanying the draft permit, for this purpose emissions of PM_{10} were used as a surrogate for emissions of $PM_{2.5}$, for which the Greater Metropolitan St. Louis area is designated nonattainment. This approach is appropriate as it is consistent with formal USEPA guidance that is currently in effect. In particular, USEPA indicates that emissions of PM_{10} should be used for implementation of the NA NSR program until it completes rulemaking that sets forth how NA NSR should be implemented in terms of emissions of $PM_{2.5}$, which has not yet occurred. Using this approach to applicability of NA NSR, the project is not a major project for emissions of particulate matter. The fact that the project is not a major project does not prevent the Illinois EPA from pursuing measures to lower the particulate matter emissions of the new emission units in the cogeneration facility if it were determined that lower emissions were needed as part of the attainment demonstration to

[3] **Particulate matter emissions consist of particles of various sizes (generally less than 40 micrometers) that remain suspended in the atmosphere for an extended period of time. PM_{10} emissions consist of filterable and condensable particulate with an aerodynamic diameter of 10 micrometers or less. Particles greater than 2.5 micrometers (but less than 10 micrometers) within the PM_{10} fraction are considered the "coarse" fraction of PM_{10}. Particles with an aerodynamic diameter of 2.5 micrometers or less are considered the "fine" fraction of PM_{10} and are separately addressed as $PM_{2.5}$.**

bring the area into compliance with the NAAQS for $PM_{2.5}$.

5. The use of PM_{10} as a surrogate for $PM_{2.5}$ violates applicable law because the federal Clean Air Act imposes specific requirements on areas that are designated nonattainment for a pollutant. In this regard, since 1997, the USEPA has distinguished $PM_{2.5}$ from PM_{10}, with adoption of a separate NAAQS for $PM_{2.5}$.[4] USEPA has made separate attainment and nonattainment designations for $PM_{2.5}$ and PM_{10}. Thus, the Granite City Works are in an area that is attainment of the PM_{10} NAAQS but nonattainment for $PM_{2.5}$ NAAQS. Illinois' regulations follow this scheme.[5] By proceeding as if the proposed cogeneration boiler project will emit only $PM_{10,}$ rather than both PM_{10} and $PM_{2.5}$, the Illinois EPA failed to determine whether the project netted out of NA NSR requirements with respect to the project's $PM_{2.5}$ emissions. If the project were significant for its $PM_{2.5}$ emissions, the project would be subject to the substantive requirements of 35 IAC Part 203.

The Illinois EPA has appropriately addressed emissions of $PM_{2.5}$ in the permitting of the proposed project. The Illinois EPA did not assume that the project will emit only PM_{10} and ignore $PM_{2.5}$. $PM_{2.5}$ is a subset of PM_{10} and its consideration is inherent in a consideration of PM_{10}, as is explicitly shown by the inclusion of $PM_{2.5}$ emissions in Attachment 1 of the draft permit. The Illinois EPA used PM_{10} as a surrogate for $PM_{2.5}$ in the determination of applicability of NA NSR for $PM_{2.5}$, which is an acceptable approach at this time. In particular, there is not a NA NSR program for emissions of particulate matter in terms of $PM_{2.5}$ at this time. The Clean Air Act does not directly impose NA NSR requirements on proposed projects for emissions of $PM_{2.5}$ as suggested by this comment. Rather the Clean Air Act requires that states or USEPA adopt an implementation plan for a nonattainment area that includes a NA NSR program for emissions of nonattainment pollutant(s), which has not yet occurred for emissions of $PM_{2.5}$.

6. The Illinois EPA based its approach to the cogeneration project's $PM_{2.5}$ emissions on "USEPA's interim guidance for implementation of

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[4] USEPA has stated that "The characteristics, sources, and potential health effects of larger or "coarse" fraction particles (from 2.5 to 10 micrometers in diameter) and smaller or "fine" particles (smaller than 2.5 micrometers in diameter) are very different." In the Final $PM_{2.5}$ Implementation Rule, USEPA told states that because of the significant differences between PM_{10} and $PM_{2.5}$, they would have to use different regulatory controls to protect air quality and public health. "In contrast to PM_{10}, EPA anticipates that achieving the NAAQS for $PM_{2.5}$ will generally require States to evaluate different sources for controls, to consider controls of one or more precursors in addition to direct PM emissions, and to adopt different control strategies." And as discussed more fully below, pollution control measures designed for PM_{10} emissions are not as effect for control of $PM_{2.5}$ emissions.

[5] Illinois regulations define "ambient air quality standard" as "those standards promulgated from time to time …by the United States Environmental Protection Agency (USEPA)…" 35 IAC 201.102. The construction or major modification in a nonattainment area of a source that is "major for the pollutant for which the area is designated a nonattainment area" without a permit is prohibited. 35 IAC 203.201. See also 35 IAC 203.207(a).

> Nonattainment New Source Review for $PM_{2.5}$."[6] However, Illinois EPA's reliance on this USEPA guidance for this project is misplaced because USEPA's recommended use of PM_{10} as a surrogate for $PM_{2.5}$ expired by its own terms when USEPA published the final $PM_{2.5}$ implementation rule in September 2007, before the draft permit was placed on public notice.

This comment misrepresents the current status of USEPA guidance for <u>implementation of NSR</u> for $PM_{2.5}$. While USEPA has completed certain portions of its implementation rulemaking for $PM_{2.5}$, which address certain matters related to emissions and air quality for $PM_{2.5}$, it has not yet completed the essential rulemaking for implementation of NSR for $PM_{2.5}$. The USEPA guidance memo ("Interim Implementation of New Source Review Requirements for $PM_{2.5}$," April 5, 2005) is a "memorandum to address how States should implement major NSR for $PM_{2.5}$ until we [USEPA] promulgate the $PM_{2.5}$ implementation rule." As of the date of issuance of this permit, the $PM_{2.5}$ implementation rule has not been completed in full. This was clearly stated by USEPA in the preamble to the rulemaking when it adopted part of the $PM_{2.5}$ implementation rule (Clean Air Fine Particle Implementation Rule; Final Rule, 72 FR 20586, April 25, 2007):

> **(Note that this rule does not include final $PM_{2.5}$ requirements for the new source review (NSR) program; the final NSR rule will be issued at a later date.) Page 20586**

This status was confirmed on September 21, 2007 in a subsequent rulemaking proposal by USEPA related to implementation of the $PM_{2.5}$ NAAQS, "40 CFR Parts 51 and 52 Prevention of Significant Deterioration (PSD) for Particulate Matter Less Than 2.5 Micrometers ($PM_{2.5}$)—Increments, Significant Impact Levels (SILs) and Significant Monitoring Concentration (SMC); Proposed Rule." In the preamble for this proposed rule, USEPA again states that:

> **The NSR part of the implementation rule is anticipated to be promulgated in September 2007. Additionally, once this proposed rulemaking is finalized, States will be able to fully implement a $PM_{2.5}$ NSR program. 72 FR 54116 (Sept. 21, 2007)**

In fact, the NSR part of the $PM_{2.5}$ implementation rule was not actually adopted in September 2007 as indicated in the proposed rule. Absent the NSR part of the $PM_{2.5}$ implementation rule, Illinois EPA is neither required nor able to implement NA NSR for $PM_{2.5}$ except as it is made possible by the USEPA guidance to which this commenter takes objection in other comments.

7. USEPA's guidance recommending use of PM_{10} as a surrogate for $PM_{2.5}$ has

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[6] In response to a request for the specific guidance upon which it was relying, the Illinois EPA provided four documents: (1) Memorandum by John S. Seitz, EPA, "Interim Implementation of New Source Review Requirements for $PM_{2.5}$" (Oct. 23, 1997) ("Seitz Memo"); (2) Memorandum by Stephen D. Page, "Implementation of New Source Review Requirements in $PM_{2.5}$ Nonattainment Areas" (Apr. 5, 2005) ("Page Memo"); (3) USEPA, Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards, 70 FR 66057 (Nov. 1, 2005) ("Proposed $PM_{2.5}$ Implementation Rule"); and (4) USEPA, Clear Air Fine Particle Implementation Rule, 72 FR 20586 (Apr. 25, 2007) ("Final $PM_{2.5}$ Implementation Rule").

expired. The Illinois EPA is improperly relying on outdated USEPA guidance documents as emissions of PM_{10} are used as a surrogate for emissions of $PM_{2.5}$ from the project, effectively "pretending" that all $PM_{2.5}$ emissions are PM_{10}. The 1997 Seitz memo only provided interim guidance for implementing the newly promulgated $PM_{2.5}$ NAAQS. It stated that sources could use PM_{10} as a surrogate for $PM_{2.5}$ in meeting NSR requirements until certain difficulties were resolved, primarily with respect to monitoring, emissions estimation, and modeling. This position was reaffirmed by USEPA specifically for NA NSR permitting in a 2005 memorandum by Stephen Page, Director of USEPA,[7] which noted that USEPA was recommending the use of PM_{10} as a surrogate for $PM_{2.5}$ "until we promulgate the $PM_{2.5}$ implementation rule." On November 1, 2005, USEPA published a proposed $PM_{2.5}$ implementation rule that made clear that use of PM_{10} as a surrogate for $PM_{2.5}$ would no longer be acceptable when the proposed rule was finalized.[8] In April 2007, USEPA published the final $PM_{2.5}$ implementation rule. Although the final rule stated that additional NSR guidance would be forthcoming, the rule clearly affirmed USEPA's rejection of the surrogacy approach as it discussed permitting under Title V of the Clean Air Act.[9]

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[7] Memorandum, April 5, 2005, Stephen Page, Director USEPA, "Implementation of New Source Review requirements in PM-2.5 Nonattainment Areas"

[8] "…The requirements applicable to NSR SIPs [State Implementation Plans] for and the obligation to subject sources to NSR permitting for $PM_{2.5}$ direct and precursor emissions are codified in the existing federal regulations, and can be implemented without specific regulatory changes. The existing regulations require NSR for any NAAQS pollutant for which an area is designated attainment or nonattainment. …For nonattainment areas, permits must comply with the nonattainment NSR requirements for $PM_{2.5}$, either in a State's approved part D program or, where that is lacking, as set forth in 40 CFR part 51, Appendix S, pursuant to § 52.24(k). …Once this $PM_{2.5}$ implementation rule is finalized, States will have the necessary tools to implement a major NSR program for $PM_{2.5}$ States will no longer be permitted to implement a nonattainment major NSR program for PM_{10} as a surrogate for the $PM_{2.5}$ nonattainment major NSR program…." 70 FR 66044, 66045 and 66058, November 1, 2005

[9] In discussing the implementation of permitting under Title V of the Clean Air Act, USEPA states, "In the preamble to the proposal, the USEPA stated that in the past some permitted entities have been using PM_{10} emissions as a surrogate for $PM_{2.5}$ emissions in permit applications, or in corrections or supplements to applications. The USEPA stated that upon promulgation of this rule, the USEPA will no longer accept the use of PM_{10} as a surrogate for $PM_{2.5}$.
Circumstances necessitating the quantification of $PM_{2.5}$ emissions and the submittal of this information include: (1) Determining all of the pollutants for which a source is major; (2) determining whether an applicable requirement or program applies, e.g., determining the applicability of a SIP requirement or a PSD or nonattainment NSR program, etc.; or (3) determining what fees a source owes a permitting authority as a result of considering $PM_{2.5}$ emissions. ….
In summary, the purpose of the statements made in the preamble to the proposal was to notify sources that as of the promulgation of this final rule, the EPA will no longer accept the use of PM_{10} emissions information as a surrogate for $PM_{2.5}$ emissions information given that both pollutants are

USEPA's guidance recommending use of PM_{10} as a surrogate for $PM_{2.5}$ has not expired. The USEPA's statements in its April 2007 rulemaking with respect to Title V permitting are not relevant to implementation for NA NSR. Moreover, even for Title V permitting, the USEPA indicates that the extent to which $PM_{2.5}$ emissions will need to be quantified in a Title V application will depend upon the circumstances of the application.[10] Because the NSR portion of the $PM_{2.5}$ rule has not been finalized, the Illinois EPA must continue to use Illinois nonattainment major NSR program for particulate matter, which addressed emissions of PM_{10}, as the means to address the potential applicability of nonattainment major NSR for emissions of $PM_{2.5}$. As also explained elsewhere in this Responsiveness Summary, the determination whether the proposed cogeneration boiler project is a major project for emissions of particulate matter for purposes of NA NSR was appropriately made during the permitting of the project using emissions of PM10 as a surrogate for emissions of $PM_{2.5}$.

8. Illinois EPA's reliance on "USEPA interim guidance" in this case is misplaced because the technical difficulties upon which USEPA initially justified the use of PM_{10} as a surrogate for $PM_{2.5}$ have been resolved.[11] When USEPA published the Proposed $PM_{2.5}$ Implementation Rule in November 2005, it stated that the technical difficulties referenced in the Seitz Memo had been resolved or were addressed in the proposal rule.[12] US Steel has also shown by certain actions on its part that the technical difficulties noted by USEPA in 1997 with respect to $PM_{2.5}$ have been resolved. In particular, US Steel has submitted Annual Emissions

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regulated by a National Ambient Air Quality Standard and therefore are considered regulated air pollutants." 72 FR 20659 – 20060, April 25, 2007

[10] **With respect to Title V permit applications, USEPA also states, "The degree of quantification of $PM_{2.5}$ emissions required in an application (including an initial, modification or renewal application), or in a correction or supplement to an existing application, depends on the types of determinations that a permitting authority needs to address for a particular source, the requirements of title V, and the information needs and requirements of the particular State in question." 72 FR 20660, April 25, 2007.**

[11] In 1997, in the Seitz Memorandum in which USEPA recommended use of PM_{10} as a surrogate for $PM_{2.5}$, it explained that this interim approach was based on technical concerns. "In view of the significant technical difficulties that now exist with respect to $PM_{2.5}$ monitoring, emissions estimation, and modeling…, EPA believes that PM_{10} may properly be used as a surrogate for $PM_{2.5}$ in meeting NSR requirements until these difficulties are resolved." Seitz Memorandum, Paragraph 1

[12] "The 1997 guidance stated that sources would be allowed to use implementation of a PM_{10} program as a surrogate for meeting $PM_{2.5}$ NSR requirements until certain difficulties were resolved, primarily the lack of necessary tools to calculate the emissions of $PM_{2.5}$ and related precursors, the lack of adequate modeling techniques to project ambient impacts, and the lack of $PM_{2.5}$ monitoring sites. As discussed in this preamble, those difficulties have been resolved in most respects, and where they have not been, the proposal contains appropriate provisions to account for it. These issues will be finally resolved by the Agency upon promulgation of these proposed revisions." 70 FR 65984. at 66043 (November 1, 2005).

Reports to Illinois EPA that present separate and distinctly different data for emissions for PM_{10} and $PM_{2.5}$.[13] The Illinois EPA also has sufficient information regarding $PM_{2.5}$ emissions to identify the region's highest-emitting sources and the extent of their emissions.

US Steel claimed to net out of NA NSR for the project's $PM_{2.5}$ emissions based on a PM_{10} netting analysis, claiming that it could not determine its $PM_{2.5}$ emissions. This claim was supported solely by the fact that USEPA has not yet promulgated a standard test method for measuring $PM_{2.5}$ emissions. However, there cannot be a legitimate claim that US Steel cannot determine its $PM_{2.5}$ emissions associated with the cogeneration boiler project.

Since 1997, many of the technical difficulties posed for the implementation of the $PM_{2.5}$ NAAQS have been resolved, especially as related to ambient monitoring and development of attainment demonstrations. However, certain critical issues for direct implementation of NA NSR in terms of PM emissions have not. Specifically, stack tests have not been conducted to measure emissions of $PM_{2.5}$ from the Boilers 1 through 10 and other existing units at the Granite City Works that will have decreases in particulate matter emission as part of this project. In this regard, while USEPA has provided guidance on testing of emissions of $PM_{2.5}$ with publication of a Conditional Test Method for emissions of $PM_{2.5}$, it has not conducted rulemaking to adopt a Reference Test Method. This is an important step for authoritative emissions testing to be performed for a pollutant and is especially critical for $PM_{2.5}$ as a physical separation of collected particles based on their sizes must be made during testing Lacking a Reference Method, one cannot be assured of consistent and reliable measurements among the tests that have been conducted, which have been conducted by different methods and which may not reflect the test methodology eventually adopted by USEPA. As stated elsewhere in this Responsiveness Summary, the permitting for the proposed project has appropriately addressed the potential applicability of NA NSR to this project for its emissions of particulate matter using PM_{10} as a surrogate of emissions of $PM_{2.5}$.

In addition, the various actions and events identified in this comment, which are not directly related to determination of applicability of NA NSR, do not show that it is inappropriate to use emission of PM_{10} as a surrogate for emissions of $PM_{2.5}$ for purposes of evaluating applicability of NA NSR. In particular, the fact that US Steel has provided $PM_{2.5}$ data in its annual emission report does not show that such data is of suitable quality for use in a permit application and permitting. A source may update an Annual Emission Report to reflect new information merely by submitting a revised report. By way of contrast, the emission information submitted by a source in a permit application routinely leads to the establishment of enforceable

[13] In the 2003 Annual Emission Report submitted to Illinois EPA, US Steel separately reported PM_{10} and $PM_{2.5}$ emissions from all point sources at the Granite City Works that combusted coke oven gas or blast furnace gas including Slab Furnaces 1 through 4, Boilers 1 through 12, and the existing blast furnace gas flare. For most emission points, US Steel used emission factors to calculate $PM_{2.5}$ emissions that were distinctly different from the PM_{10} emission factors.

limits that reflect the information in the application. Those limits may only be changed by issuance of a revised permit by the Illinois EPA. In the event underlying data changes, the limits in a permit do not automatically change to reflect the new data and enforcement may be initiated for failure to comply with the established limits.

9. The Illinois EPA's reliance on "USEPA interim guidance" in this case is also misplaced because USEPA guidance cannot subvert the clear requirements of federal and state law and regulations, which establish $PM_{2.5}$ as a pollutant separate and distinct from PM_{10}, requiring specific permit requirements and emissions controls for $PM_{2.5}$. USEPA guidance memoranda are not regulations and do not have the force of law. They may not be relied on to avoid complying with statutes and regulations. As non-legislative rules that are not subject to notice and comment, guidance documents do not establish "binding norm[s]," are not "finally determinative of the issues or rights to which they are addressed" and may leave agency officials "free to exercise discretion to follow, or not to follow, the [announced] policy in an individual case." In recognition of this, the Seitz Memo states clearly that it does "not bind State and local governments and the public as a matter of law." As USEPA stated in the Final $PM_{2.5}$ Implementation Rule: "…the EPA will no longer accept the use of PM_{10} emissions information as a surrogate for $PM_{2.5}$ emissions information given that both pollutants are regulated by a National Ambient Air Quality Standard and therefore are considered regulated air pollutants." USEPA promulgated the $PM_{2.5}$ NAAQS by regulation in 1997. Neither Illinois EPA nor US Steel may justify ignoring the $PM_{2.5}$ NAAQS by reliance on informal USEPA guidance (even if it supported their position, which it does not at this time).

The Illinois EPA's reliance on USEPA guidance in this case is not misplaced. This comment does not demonstrate that the USEPA guidance is contradicted by the express terms of the Clean Air Act, other than to note that PM_{10} and $PM_{2.5}$ are considered different air pollutants under the provisions of the Clean Air Act. The Illinois EPA has appropriately addressed applicability of NA NSR to the emissions of particulate matter from the proposed cogeneration boiler. For this purpose, emissions of PM_{10} have been used as a surrogate for emissions of $PM_{2.5}$ since a significant emission rate has not been adopted or otherwise formally established for emissions of particulate matter measured as $PM_{2.5}$.

10. The convoluted permit application history since July 2006 raises troubling questions and makes meaningful public comments difficult. Simply understanding the chronology of US Steel's permit application is not a task for the faint of heart.[14] Of particular concern is that in

[14] In July 2006, US Steel initially filed two applications, one for various projects to reduce emissions, including construction of a coke oven gas desulfurization system and one for a new cogeneration boiler and coke conveyor system. At the same time, Gateway Energy and Coke Company (Gateway) filed an application to construct a new heat recovery coke plant at the Granite City Works. In its applications, US Steel described the Gateway plant as "directly related" to its applications. US Steel also claimed that its proposed new emission units would net out entirely of NSR.

August 2007, US Steel submitted a replacement application for the cogeneration boiler project. This application showed that the boiler project was a separate project from Gateway's proposed coke oven plant and would net out entirely of NSR. Before this, both US Steel and the Illinois EPA had treated both projects as being parts of a single larger project that was major project to emissions of particulate matter.[15] This suggests that the projects were restructured to minimize applicable emission control requirements, which is troubling for a source that already has a large impact on ambient air quality.

It is not uncommon for permit applications for netting projects to have several revisions or addenda. In this case, the formal separation of the cogeneration boiler and coke plant projects did not occur until US Steel submitted necessary information to fully explain the absence of any significant functional or economic relationships between the two projects. In fact, given the lack of such information in the initial application, the Illinois EPA originally understood that both projects were part of a single larger project. It was not until later in the review of the projects that it became apparent that the projects were appropriately treated as separate projects, with relevant supporting information then supplied to the Illinois EPA by US Steel and Gateway. This development was a direct result of the Illinois EPA's response to the initial application for the cogeneration boiler project, which did not treat the project as separate from the proposed coke plant because US Steel had not provided an application with relevant information to support the project being a separate project from the proposed coke plant.

In December 2006, US Steel revised its application, transferring four activities from the application for emission reduction projects to the cogeneration boiler application. US Steel continued to maintain that the coke plant was related to its cogeneration boiler project: "The three applications were submitted together because all the projects are related to the development of a heat-recovery coke oven battery and associated cogeneration facility." Then, in January 2007, US Steel supplemented its application for the cogeneration boiler project with a LAER and BACT analysis for PM emission, stating that this analysis was submitted based on guidance from Illinois EPA staff.

In August 2007, the definition of the projects took another turn. US Steel submitted a replacement application, redefining the nature of the project. US Steel now asserted that its cogeneration boiler project was quite separate from the Gateway heat recovery coke oven project. US Steel again claimed that the cogeneration boiler project would net out entirely of NSR.

[15] It is noteworthy that in its January 2007 second addendum to the application, US Steel stated that because of the interrelationship between the proposed Gateway coke oven plant and the proposed cogeneration boiler project and emission reduction activities, the coke plant project's emissions were considered in its overall netting analysis. As a result, US Steel could not net out of PM_{10} and $PM_{2.5}$ emissions for the cogeneration boiler project and submitted a BACT and LAER analysis as required for a major projects for PM_{10} and $PM_{2.5}$. In July 2007, Illinois EPA provided US Steel a preliminary draft permit which reflected the cogeneration boiler project being major project for $PM_{2.5}$ emissions, subject to the requirements of NA NSR, including LAER.

The Illinois EPA was aware that this change in the definition of the projects could be confusing. This is why it was decided that US Steel should submit a complete, new application in August 2007 rather than simply submit another addendum to the original application.

11. The draft permit would improperly allow the proposed cogeneration boiler project to net out of NA NSR and PSD because the Illinois EPA did not document, or inform the public regarding, the netting calculations on which it proposed to let the cogeneration boiler project net out of NA NSR and PSD requirements. The Project Summary, Section III, states that potential annual emissions of the new emission units are presented in Attachment 1 to the draft permit.[16] Attachment 1 reports total emissions of the entire project, but does not contain individual emission information for the boiler, a cooling tower; and flare. It also does not provide information on the projected actual emissions from these units. Without this information, it is impossible to assess the accuracy of the netting analysis.

    The draft permit would let the cogeneration boiler project escape both NA NSR and PSD requirements based on US Steel's claim, unsubstantiated in the draft permit or project summary, that the project will not involve a significant net emission increase of any regulated pollutants. As summarized below, US Steel's netting claim suffers from several critical errors and omissions.

A summary of the netting analysis for the cogeneration boiler project was present in Attachment 1 of the draft permit and is contained in Attachment 1 of the issued permit. Accordingly, the Illinois EPA has publicly documented the netting analysis on which the permit is based. The details of the netting analysis are contained in the permit applications, including the information in the most recent version of the application for the boiler project. This information was sufficient to allow review and comment on the netting analysis by the public.

As Attachment 1 of the permit provides a summary of the netting analysis, it does not provide emissions for the boiler project on a unit-by-unit basis. There is not a need to identify each emission unit in this summary. Conditions within the permit limit the emissions of the units. In particular, for $PM_{2.5}$, Attachment 1 shows project emissions of 232.25 tons per year, which reflects emissions of up to 228.39 tons per year from the new boilers and new flare, in combination, as allowed by Condition 3.1.6(b)(ii), and up to 3.86 tons per year from the new cooling tower, as allowed by Condition 3.3.6(b).

Information on the projected actual emissions from the new emission units is not relevant for the netting analysis. This is because these units are "new units" and their emissions are appropriately evaluated in the netting analysis in terms of their potential or permitted emissions, not their projected actual emissions which would be lower than their potential

[16] In addition, the Project Summary, Section III, incorrectly states that a netting analysis for the cogeneration boiler project is presented in Attachment 2 to the draft permit, when it is actually part of Attachment 1.

emissions. Information on projected actual emissions of units would only be relevant for netting under the PSD rules for existing units for which modifications were proposed.

12. The use of PM_{10} as a surrogate for $PM_{2.5}$ in the netting analysis violate applicable provisions for such analyses in Illinois' NA NSR rules, 35 IAC Part 203. These rules define a major modification in terms of emissions of the specific pollutant for which an area is nonattainment,[17] which in this case would be emissions of $PM_{2.5}$. Neither US Steel nor Illinois EPA has conducted a netting analysis for $PM_{2.5}$ emissions. Even if the calculated PM_{10} emission decreases equal or exceed the projected PM_{10} emission increases, there is no reason to assume – without analysis or documentation – that the same will be true for $PM_{2.5}$ emissions. Numerous different activities and processes are involved on both the decrease and increase side of the netting analysis, and they are likely to have different proportions of $PM_{2.5}$ in their particulate matter emissions.

The netting analysis for the cogeneration boiler project is consistent with 35 IAC Part 203. For particulate matter, these rules provide that a net emission increase is significant if the increase is equal to or in excess of 15 ton per year measured as PM_{10} (35 IAC 203.209(a)(4)). These rules do not set a significant emission rate for particulate measured as $PM_{2.5}$, as is necessary for a netting analysis to be explicitly conducted in terms of $PM_{2.5}$ emissions.

In addition, the netting analysis for the project reasonably considers emissions of $PM_{2.5}$. In particular, most of the project's particulate matter emissions would come from the proposed cogeneration boiler and flare, as they burn blast furnace gas. A comparable amount of the contemporaneous emissions decreases come from Boilers 1 through 10, which also burned blast furnace gas. The comment lacks any support for the notion that proportions of $PM_{2.5}$ in the particulate matter emissions of these units are different. The Illinois EPA is not aware of information that would suggest that the character of the particulate matter emissions of the proposed new boiler will be significantly different than those of the ten existing boilers that are to be shut down.

13. The draft permit would improperly let the proposed cogeneration boiler project net out of NA NSR because relevant rules preclude the use of PM_{10} as a surrogate for determining $PM_{2.5}$ emissions decreases. An emission reduction may not be used to net out an emission increase unless the reduction is "creditable" and an emission reduction is not creditable unless "[i]t has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change." 35 IAC 203.208(c) and (c)(2). In setting a separate NAAQS for $PM_{2.5}$ as distinct from that for PM_{10}, USEPA made clear a decade ago that the two pollutants pose different threats to public health and welfare, and indeed that $PM_{2.5}$ is of greater public

[17] "[A] physical change, or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant for which the area is designated a nonattainment area, shall constitute a major modification of a source." 35 IAC 203.207(a).

health significance.[18] Accordingly, use of a netting analysis for PM_{10} does not suffice as a netting analysis for $PM_{2.5}$ and would be in violation of governing Illinois regulations. The absence of any documentation from US Steel regarding $PM_{2.5}$ emissions before or after the cogeneration boiler project precludes it from netting out of NA NSR review for $PM_{2.5}$. It also violates Illinois' rules requiring complete application information. Unless and until US Steel provides a sound netting demonstration with respect to $PM_{2.5}$ emissions foe the proposed cogeneration boiler project, the project must comply with NA NSR requirements for $PM_{2.5}$ emissions.

As already explained, the particulate matter emissions decreases from the existing boilers used in the netting analysis for this proposed project certainly have approximately the same qualitative significance as the particulate matter increases. In addition, this comment reads more into the cited language than does USEPA as the cited language is also found in the federal NA NSR rules (40 CFR 51.166(b)((3)(vi)(*c*)). USEPA's guidance for interim implementation of NA NSR for $PM_{2.5}$ clearly shows that the USEPA does not consider that the adoption of NAAQS for $PM_{2.5}$ directly triggered a requirement that netting for particulate matter in $PM_{2.5}$ nonattainment areas must be conducted in terms of $PM_{2.5}$. Finally, US Steel has adequately described the particulate matter emissions of the proposed units in a manner consistent with established practice in Illinois for the completeness of construction permit applications.

14. US Steel improperly calculated baseline actual emissions for the proposed project using data that does not reflect actual emissions from the units with emissions decreases. Both NA NSR and PSD evaluate whether a modification involves a "significant net emissions increase" by comparing "actual emissions" prior to the project with actual or potential emissions with the project. Both programs make clear that the pre-project "actual emissions" are to reflect the amount of pollutants that units in fact emitted during the pre-project or baseline, timeframe. However, without accurate baseline information, it is impossible to demonstrate that claimed decreases reflect actual decreases in emissions.

US Steel provided an acceptable determination in its application of the

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[18] Based on the recent health effects evidence and the fundamental physical and chemical differences between fine and coarse fraction particles, the Criteria Document and Staff Paper conclude that fine and coarse fractions of PM_{10} should be considered separately. … [F]ine particles are a better surrogate for those components of PM that are linked to mortality and morbidity effects at levels below the current standards. …
The proposal states that the main basis for separating the fine and coarse fractions of PM_{10} is that, because they are fundamentally different PM components with significantly different physico-chemical properties and origins, separate standards would permit more effective and efficient regulation of PM. … [T]he preponderance of the available evidence suggests that strategies to control fine particles will more effectively reduce population exposure to substances associated with health effects in the recent epidemiological studies.

actual emissions of existing emission units. While emission data from continuous emission monitoring equipment or data from more recent stack tests on more of the subject units would certainly have been preferable, in practice, that level of data is only rarely available for a netting analysis. Available emission factors must routinely be used with appropriate operating data to determine actual emissions of existing units and this practice is clearly accommodated by the relevant rules.[19]

15. For Boilers 1 through 10, US Steel calculated baseline NO_x emissions using an emission factor based on a stack test conducted a number of years before the baseline period. A one-time stack test conducted before the baseline period cannot serve per se in lieu for actual emissions data during this period. Stack tests are conducted under "optimal" conditions and do not capture the variability inherent in the operation of combustion units from variability in fuel quality and combustion conditions.

The data from this stack test was appropriately used to establish a NO_x emission factor for burning of coke oven gas. This emission factor was then used with data on actual usage of coke oven gas during the baseline time period to calculate actual emissions associated with burning of coke oven gas during the baseline time period. The test was not used nor could it ever be used by itself to directly determine the actual emissions during the baseline time period. Notwithstanding possible variability in the operation of emission units and the nature of stack testing, this emission factor from testing of a representative emission unit burning coke oven gas generated at the Granite City Works, the source under review, is preferable to a generic emission factor for the determination of actual emissions.

16. US Steel's use of NO_x emission data from stack tests on Boiler 12 and Slab Furnace 4 calculate baseline emissions for Boilers 1 through 10 and Slab Furnaces 1 through 3 is questionable. The sizes and ages of the boilers are significantly different.[20] Second, the Emission Reduction Credit Permit Application indicates that the baseline coke oven gas NO_x emission factor for the slab furnaces was calculated base on a natural gas stack test on Furnace 4 and two stack tests on Boiler 12 (natural gas and coke oven gas). The application also does not explain why stack test results from a boiler with a rated heat input capacity of 225 mmBtu per hour are representative of emissions from

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[19] **Both NA NSR and PSD provide that "…Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored or combusted during the selected time period…." 35 IAC 203.104 and 40 CFR 52.21(b)(21)(ii) .**

[20] Boiler 12, with a rated heat input capacity of 225 mmBtu/hour, is a "large" boiler while Boilers 1 through 10, with rated heat input capacity of 60 mmBtu/hour each, are "small" boilers, which places the boilers in different emission categories with substantially different emission factors under USEPA's *Compilation of Air Pollutant Emissions Factors*, AP-42. Boiler 12 is also much newer than the boilers that are to be shut down, which date back to the 1920s. Slab Furnace 4 with a rated heat input capacity of 495 mmBtu per hour is larger than Slab Furnaces 1 through 3, which are each rated at 322 mmBtu per hour.

furnaces rated at 495 and 322 mmBtu per hour.

When determining actual emissions, preference is given to emission factors from stack tests as such factors are generally considered more reliable than generic emission factors. This principle is relevant here because fuel bound nitrogen contributes to the NO_x emissions from burning of coke oven gas, unlike natural gas and blast furnace gas for which fuel-bound nitrogen is not significant. Accordingly, US Steel used stack tests to develop a site-specific emission factor that is applicable for the coke oven gas that is produced from its existing coke oven battery. This factor was derived from stack tests on Boiler 12, which has its own stack and can burn both 100 percent natural gas and 100 percent coke oven gas, which the slab furnaces are unable to do. The resulting emission factor is reasonably applied to all units burning of coke oven gas as it reflects the significant contribution of fuel bound NO_x.

17. For Boilers 1 through 10 for emissions of pollutants other than NO_x, (e.g., CO and VOM), US Steel calculated actual emissions using emissions factors from USEPA's *Compilation of Air Pollutant Emissions Factors*, AP-42, rather than historic emission data for the subject period. US Steel also used emission factors from AP-42 to calculate baseline emissions from the shutdown of the Coke Oven Gas Pump system. This also does not satisfy the requirement that baseline emissions be "actual." Further, AP-42 emission factors are industry wide averages; so that the actual emission rates from some units are lower and the actual rates from other higher. Thus, these factors cannot be used to determine actual emissions.

Emission factors developed from stack tests on particular emission units would be preferable to the use of generic emission factors from AP-42 or tests on similar units. However, lacking such better emission factors, as is the case here, generic emission factors from AP-42 may be used in the calculation of historic actual emissions of units during the baseline time period.

18. In its netting analysis, US Steel improperly relies on certain decreases in NO_x emissions from the shutdown of Boilers 1 through 10 and the installation of low-NO_x burners at Slab Furnaces 1 through 4 that are not surplus. A significant portion of these emissions decreases cannot be used for netting because they must be made under state and federal regulations that require Reasonably Available Control Technology (RACT) for emissions of NO_x.[21] In particular, Illinois EPA

[21] Because the St. Louis Metro-East area is designated a moderate nonattainment area for the 8-hour ozone NAAQS, effective June 15, 2004, Illinois is required to develop a State Implementation Plan for the area and implement certain requirements under the Clean Air Act, including implementation of Reasonably Available Control Technology (RACT) to control emissions of NO_x from major source, pursuant to Section 182(f) of the Clean Air Act. (The only exception to this requirement would be if the USEPA approves a NO_x RACT waiver for the Metro-East area, which has not occurred.) US Steel's Granite City Works are a major source of NO_x emissions, with

has drafted proposed NO_x RACT rules[22] that would require the decreases in NO_x emissions from these units that US Steel is claiming are "voluntary" or surplus reductions. Additionally, these emissions decreases are already counted to demonstrate reasonable further progress under Illinois' ozone State Implementation Plan. 35 IAC 203.208(c)(4) precludes the use for netting purposes of emissions decreases previously relied upon for demonstrating attainment or reasonable further progress in the nonattainment area affected by the decreases. For this purpose, the Illinois EPA has made a commitment to implement NO_x RACT in the St. Louis Metro-East Nonattainment Area. The various corrections to the netting analysis for NO_x emissions recommended by comments lower the net change in NO_x emissions with the cogeneration boiler project from a net decrease of 681 tons/year to a net decrease of only 169 tons/year. Accordingly, the cogeneration boiler project would still net out of NA NSR and PSD review for NO_x emissions. However, these corrections to the netting analysis are also applicable to the netting analysis for the proposed Gateway heat recovery coke plant, as will be addressed in comments on the draft permit for that project.

The emissions decreases relied upon for the cogeneration boiler project are not required at the present time and accordingly are surplus. This is because, as the comment observes, there are currently no state or federal regulations that require these emissions decreases. As observed by the comment, the Illinois EPA has only drafted proposed NOx rules. The Illinois EPA is still receiving comments from certain stakeholders on its proposal. When the proposal is finalized, it will still have to be submitted to the Pollution Control Board for rulemaking. The Pollution Control Board is a governmental body separate from the Illinois EPA, that has the authority to adopt emission standards in Illinois. It has the responsibility to hear testimony from potentially affected sources and other interested parties and to adopt emissions limits that it determines will be technically feasible and economically reasonable to comply with based on the record of the rulemaking. There is not any certainty that the rules and emissions limits proposed by the Illinois EPA will be the same as those adopted by the Pollution Control Board. Accordingly, the NO_x emissions decreases calculated by US Steel for the netting analysis are surplus and it is not appropriate to adjust those decreases as suggested by this comment.

In addition, assuming for purposes of argument that such unilateral action by the Illinois EPA would be sufficient to affect the status of emissions decreases, the Illinois EPA has not relied upon these decreases for attainment planning. In particular, the reductions required for the proposed coke plant (which overlap with the reductions required for the cogeneration boiler project) were not included in the future year inventory in the draft 8-hour ozone attainment demonstration for the Metro-East Nonattainment Area.[23]

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reported NO_x emissions of 3910, 2315 and 3767 tons in 2002, 2003, and 2004, respectively.

[22] The Illinois EPA released a draft of its proposed NO_x RACT rules for public comment on July 30, 2007.

[23] **http://www.epa.state.il.us/air/sip/metro-east-8hr-attainment-demo-draft.pdf, page 27.**

19. None of the NO_x emissions decreases from the Slab Furnaces is creditable because they are required by RACT and are not surplus. The netting analysis for the draft permit includes NO_x decreases of 427.94 tons from the installation of low-NO_x burners on Slab Furnaces 1 through 4 (Refer to Attachment 1). The draft NO_x RACT rule would apply to these four units. US Steel submitted detailed netting calculations for the slab furnaces. US Steel calculated baseline actual NO_x emissions to be 1152.03 tons per year. US Steel calculated future NO_x emissions of 724.09 tons per year which is established as an annual emissions limit in the emissions reduction credit permit (Permit 06070022). However, application of NO_x RACT would require lower future emissions from these units.[24] The NO_x emission limit for the furnaces in the draft of proposed NO_x RACT rules is 0.18 lb NO_x/mmBtu. Future NO_x emissions allowed with this RACT limit, calculated using the same method used by US Steel with a future total fuel usage of 7,169,150 mmBtu per year[25], would only be 645.22 tons per year, not 724.09 tons per year. Thus, none of the NO_x decreases claimed from the installation of low-NO_x burners on the slab furnaces is creditable.

While adoption of NO_x RACT rules could potentially affect the status of certain decreases in NOx emissions for netting, at this time, NO_x RACT rules have not been finalized. These emissions decreases do not cease to be surplus because of the preparation of a draft regulatory proposal. While the slab furnaces are targeted for further control under the draft NO_x RACT rule proposal, US Steel is entitled to rely upon these decreases because rules have not been finalized. In addition, these decreases have not been included in the future year emissions inventory.

20. Some of the NO_x emission decreases from the shutdown of Boilers 1 through 10 are not creditable for netting because the decreases are required by NO_x RACT. A proposed NO_x RACT rule, 35 IAC 217.164, would apply to these boilers requiring use of combustion tuning. The Illinois EPA assumed in its attainment demonstration modeling for the Metro-East ozone nonattainment area that combustion tuning would result in a 30 percent reduction in NO_x emissions. Accordingly, a NO_x emissions decrease of 278.89 tons per year from the shutdown of existing Boilers 1 through 10, based on the historic actual emissions of these boilers, cannot be relied as would occur in the draft permit. Instead, the emissions decrease from the shutdown of these boilers must be reduced by 30 percent, with only a decrease of 195.22 tons of NO_x from these boilers claimed as surplus and used for netting. This is because the netting analysis must discount the actual NO_x emissions by this factor for implementation of this NO_x RACT control measure.

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[24] Proposed 35 IAC 217.244 would establish NO_x RACT limit for reheat furnaces with rated heat input capacity equal to or greater than 100 mmBtu per hour at 0.18 lb/mmBtu. All four slab furnaces are rated heat at greater than 100 mmBtu per hour, with Slab Furnaces 1 through 3 at 322 mmBtu each and Slab Furnace 4 at 495 mmBtu.

[25] 0.18 lb NO_x/mmBtu) x (7,169,150 mmBtu/year) x (1 ton/2000 lb) = 645.22 tons NO_x/year

As previously discussed, it would not be appropriate to proceed in the manner recommended by this comment, adjusting the amount of NO_x emissions decreases available for purposes of netting for the issued permit.

21. How did Illinois EPA make the decision, as reflected in the draft permit prepared for the coke plant proposed by Gateway Energy, to let that project net out of PSD and NA NSR for emissions of certain pollutants by using contemporaneous emissions decreases from US Steel? Is there any documentation for how the Illinois EPA concluded that these projects are occurring at a single source?

Comments EPA on the coke plant project and associated conveyor system and the draft permits prepared by the Illinois EPA for these facilities will be addressed in a separate Responsiveness Summary when the Illinois EPA takes action on the permit applications for those proposed facilities. These application and the comments submitted to the Illinois EPA on these projects are still under review by the Illinois EPA.

22. Even though PSD and NA NSR do not apply to the cogeneration boiler project, US Steel committed to use of Best Available Control Technology (BACT) and Lowest Achievable Emission Rate (LAER) equivalent technology for the particulate matter (PM) emissions of the project. However the PM limits in the draft permit, which are the limits from US Steel's BACT and LAER analysis, do not represent BACT or LAER as that analysis was inadequate and failed to identify BACT and LAER limits with a reasoned analysis.[26]

While these comments identify certain deficiencies in the scope and content of the BACT and LAER analysis submitted by US Steel, they do not show that the PM emissions of the cogeneration boiler project will not be effectively and appropriately controlled. In addition, as relevant for the attainment demonstration, the analysis submitted by US Steel confirms that cleaning of the raw blast furnace gas (BFG) prior to combustion with high-energy scrubbing as currently occurs for the BFG fuel supply continues to be the appropriate method to control PM emissions. "Add-on," post-combustion control for PM emissions, which is not currently used in the steel industry on units designed to burn BFG, should not be installed on the proposed cogeneration boiler. As US Steel must invest in additional control systems to better control PM emissions from the Granite City Works, such investment

[26] US Steel's BACT and LAER analysis addressed the boiler and lacks analyses for the flare and cooling tower. It lacks a complete and reasoned five-step Top-Down BACT analysis. In particular, it lacks Step 1, a list of all feasible control options, and Step 2, in which infeasible options are eliminated. Steps 4 and Step 5 are overly simplistic, as all other alternative control options are rejected based on cost and existing control measures are selected as both BACT and LAER. The analysis focused on the control of filterable PM_{10} and did not separately consider control of condensable particulate or filterable $PM_{2.5}$. The analysis did not specifically document that the costs for use of add-on control for the proposed boiler would be extreme compared to the costs expended for control of BFG boilers at other steel mills. Certain assumptions in the cost analysis for alternative control options inflated the costs of those options.

is better directed at existing units, to achieve greater reductions in emissions.

Moreover, as observed by the comment, this project is not subject to PSD or NA NSR. As such, the rigor of the BACT and LAER analysis is academic. The Illinois EPA's action on the application for the proposed project is constrained by applicable laws and regulations. Accordingly, the Illinois EPA did not perform its own BACT and LAER analysis as one is not required for the project. The permit establishes limits for the particulate content of BFG and the PM emissions of the cogeneration boiler at the levels proposed as BACT and LAER by US Steel in the application.

23. A critical deficiency in US Steel's BACT and LAER analysis was that cost-effectiveness values for add-on control were overstated by a factor of ten by the assumption about the further emission reductions that would be achieved. Cost-effectiveness was calculated assuming that add-on control devices would achieve 99.9% further reduction in PM_{10} emissions. However, baghouses, the top-ranked control devices, are known to achieve 99.99% PM_{10} reductions from units at steel mills. The use of a higher control efficiency, which would not significantly affect cost, would substantially improve cost effectiveness. In addition, the emission reductions only address filterable PM_{10}, whereas condensable particulate can comprise over 50% of the particulate from combustion of gaseous fuels. US Steel also used economic factors that greatly overstate the annualized cost of purchase and installation of add-on control equipment.

The changes recommended by this comment with respect to calculation of emission reductions would not noticeably change the cost-effectiveness analysis.[27] This is because the further reduction in overall emissions with increased efficiency is small given the reduction in emissions that has already been accounted for. Moreover, given the levels of PM emissions achieved with pre-combustion cleaning of BFG, it is questionable whether baghouses would achieve the efficiency assumed by US Steel, much less the efficiency suggested by this comment. This is because these values for control efficiency of baghouses represent the nominal performance of baghouses on process units or solid fuel combustion units without any precombustion fuel cleaning. In addition, as conventional PM control devices, like baghouse and electrostatic precipitators, do not control condensable particulate, it is also unreasonable to assume any further control of condensable particulate would be provided by use of such devices.

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[27] **With a cost for add-on control of $3,000,000 per year and a further reduction of 64.3 tons of PM achieved assuming 99.9% control of PM, typical of US Steel's analysis, the theoretical value of cost-effectiveness of add-on control is $46,660 per ton ($3,000,000 ÷ 64.3 = $46,660).**

If the efficiency of the add-on control system is 99.99%, rather than 99.9%, as recommended by this comment, the further reduction in emissions would increase slightly to 64.36 tons, with a theoretical value of cost-effectiveness of $46,610 per ton.

Similarly, if the efficiency is only 99.0% or 98%, the further reduction becomes 63.72 or 63.08 tons, with cost-effectiveness values of $47,080 or $47,560 per ton, respectively.

Emissions of condensable particulate are more appropriately controlled by the cleaning of the BFG prior to combustion to remove constituents in the BFG that contribute to the formation of condensable particulate.

The recommended changes to the economic factors used in the cost-effectiveness analysis for of add-on control devices also not would alter the conclusions of the analysis. This is because of the magnitude of the capital costs of such devices and the fact this cost is only one component of the annualized cost of control. [28]

24. The Illinois EPA has not adequately explained why the draft permit would not set limits for emissions of Hazardous Air Pollutants (HAPs) from the proposed project, which limits would represent application of Maximum Achievable Control Technology (MACT) for HAP emissions. The draft permit and the Illinois EPA's project summary only provide conclusory reasons why the permit does not set such limits, which leaves questions about the validity of the approach that has been taken to MACT limits.

    This is a concern because the DC Court of Appeals vacated the National Emissions Standards for Hazardous Air Pollutants (NESHAP) Standards for Industrial Commercial and Institutional Boilers and Process Heaters 40 CFR 63 Subpart DDDDD (the Boiler MACT Rules) on July 30, 2007. This vacatur results in a potential change in the applicable requirements for the project. In its application, US Steel acknowledges the vacatur of this NESHAP standard, which would not have set any emission standards for the proposed boiler.[29] However, the application does not address the consequences of the vacatur of this NESHAP for the permitting of the proposed boiler. In this regard, the application does not provide data on the HAP emissions from the boiler or suggest case-by-case MACT standards for the boiler.

    The Illinois EPA did address the consequences of the vacatur of the boiler MACT regulations, concluding that a case-by-case MACT determination was not required as part of the processing of the permit for the cogeneration boiler project. In the draft permit, Illinois EPA states that a case-by-case MACT determination is not required because the proposed boiler is not a "major source" triggering the case-by-case MACT requirement of Section 112(g). The only explanation offered in support of this conclusion in the permit is that the "affected unit" will be at a "developed site" and that its HAP emissions will be below the major source threshold. However, the governing regulations define "major source" to encompass not only the proposed boiler, but also all other emissions units at the source. The project summary does not

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[28] **US Steel used a capital recovery factor of 0.11756 based on a 20 year equipment life and an annual interest rate of 10 percent. At an annual interest rate of 7 percent, the capital recovery factors are still 0.0944 and 0.0806 for equipment lives of 20 and 30 years, respectively.**

[29] Had the Boiler MACT Rules not have been vacated, the proposed cogeneration boiler would have met the exclusion for boilers fired with blast furnace gas at 40 CFR 63.7491(o), so that the emission standards for HAPs in the Boiler MACT rules would not have applied to the proposed boiler.

clarify this matter, as it refers to the possible need for a case-by-case MACT determination under Section 112(j) of the Clean Air Act, not Section 112(g) of the Clean Air Act, with a MACT determination that would not occur in the construction permit for the project, but instead as part of the CAAPP permit for source. In this regard, a CAAPP permit has never been issued for the source[30] and it is inappropriate for the Illinois EPA not to act under Section 112(g) and instead defer action until it eventually acts on the elusive CAAPP permit.

The implementation of case-by-case MACT determinations under Section 112 of the Clean Air Act is governed by specific USEPA rules at 40 CFR Part 63, Subpart B. It is not governed by the provisions of the general regulations for emissions of HAPs, referred to by this comment. For the purpose of case-by-case MACT determinations under Section 112(g) of the Clean Air Act, a proposed new emission unit at an existing source is only subject to a case-by-case determination if the unit itself would be a major "process or production unit" as defined by 40 CFR 63.41. While the proposed boiler would be a new process or production unit, it is not a major unit for emissions of HAPs. This approach to proposed modifications at existing sources, determining applicability for individual process or production units, was clearly set out by USEPA during the adoption of 40 CFR Part 63 Subpart B.[31] In this regard, under the general framework of the Clean Air Act for stationary sources of HAP emissions, the proposed project is appropriately addressed as a possible major modification of the existing Granite City Works. Whether the project is a major modification for this purpose is governed by USEPA rules that were specifically developed and adopted by USEPA to implement Section 112(g) of the Clean Air Act.

Case-by-case MACT determinations can also be triggered for a particular category of emission unit pursuant to Section 112(j) of the Clean Air Act if the USEPA lags more than 18 months behind schedule in adopting MACT NESHAP standards for the category of units. A general consequence of the vacatur of the boiler MACT rules in July 2007 is that USEPA is now more than 18 months behind schedule in adopting MACT standards for the boiler category. This triggered Section 112(j) of the Clean Air Act for boilers, as a category of emission unit. However, this does not provide a legal basis to make a case-by-case determination of MACT in a construction permit for the proposed

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[30] US Steel's Granite City Works has been operating for almost 12 years under the CAAPP application shield, with the CAAPP application pending with the Illinois EPA since 1996. While a draft CAAPP permit was released in 2003 it was then retracted, and only now is a new draft CAAPP permit apparently nearing completion,

[31] **The preamble to the rulemaking discusses when Section 112(g) would be applied to new equipment proposed at existing sources, "Addition of Equipment at an Existing Plant Site. This rule treats addition of a new "process or production unit" as construction, as discussed above, and requires application of new source MACT to that process or production unit. This ensures that new major-emitting process or production units (that is, those emitting more than 10 tons/year of a HAP, or 25 tons/year from all HAP, or amounts exceeding a lesser quantity cutoff), which generally would represent sizeable investments, will be built with state-of-the art control technology." 61 FR 68392, December 27, 1996.**

cogeneration boiler. Sections 112(j)(3) and (4) of the Clean Air Act specifically provide for case-by-case MACT determinations made in Title V permits, which in Illinois means in CAAPP permits, not in construction permits. In addition, the USEPA already determined when originally adopting the boiler MACT NESHAP that it was not appropriate or necessary to set specific MACT emission standards for boilers fired with blast furnace gas. To the extent case-by-case MACT limits were set, they would only be in effect on an interim basis until USEPA readopts a MACT NESHAP for boilers. Finally, as case-by-case MACT limits do need to be made for sources pursuant to Section 112(j) of the Clean Air Act as a consequence of the vacatur of the boiler MACT rules, such MACT limits are more appropriately determined during processing of a CAAPP permit, so as to comprehensively address all boilers at a source that is major for HAPs.

25. The Illinois EPA does not indicate, either in the draft permit or the project summary, what it understands to be the projected HAP emissions from the project. The US Steel application is also unenlightening on this critical point. Thus, it is impossible to understand or critique the Illinois EPA's conclusion that projected HAP emissions from the proposed boiler will be less than 10 tons per year of any individual HAP and less than 25 tons per year of any combination of HAPs.

The issued permit includes explicit emission limits to ensure that new units are not major sources of emissions for HAPs. In the draft permit, emissions of HAPs from the cogeneration boiler and flare were indirectly addressed, as these emissions will be a component of the VOM and PM emissions and were addressed by the emission limits for VOM and PM.[32]

26. Will a case-by-case MACT determination be made during the processing of the CAAPP permit for the Granite City Works? Is there a date when that permit will be issued?

At this time, the Illinois EPA is making its final edits on a draft of a CAAPP permit for the Granite City Works that does not include case-by-case MACT determinations. Depending upon the nature of comments received during the public comment period on this draft permit, it is possible that the CAAPP permit for the Granite City Works could be issued in as little as six months. Section 112(j) of the Clean Air Act provides a minimum of 18 months[33] for case-by-case determinations of MACT to be made so the processing of this CAAPP permit does not need to include such determinations. Making case-by-case determinations of MACT in this CAAPP permit would delay issuance of this

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[32] As the draft permit would limit the boiler's VOM emissions to less than 1 ton per year, the emissions of organic HAPs that are present in VOM emissions from the boiler cannot be major. As the draft permit would limit PM emissions of the boiler, particulate HAP was also addressed, although not as directly since PM emissions are limited to 228 tons per year. However, as PM emissions would be composed mainly of iron oxide and mineral materials, particulate HAPs also would not be present in sufficient quantities for the boiler to be major for HAPs.

[33] Section 112(j) of the Clean Air Act also provides that a source may have up to 18 months to supplement its application for a case-by-case MACT determination if the initial application is determined to be incomplete.

permit, which is most significant as it addresses existing iron, steel and coke making operations at the Granite City Works, not the boilers which are all fired on gaseous fuels.

27. Why didn't US Steel address emissions of carbon dioxide (CO_2) in the application for the cogeneration boiler and why didn't the Illinois EPA evaluate CO_2 emissions when reviewing the application?

US Steel did not provide data for CO_2 emissions in its application and the Illinois EPA did not perform any evaluation of CO_2 emissions because CO_2 is currently not a pollutant regulated under the Clean Air Act. Accordingly, there is not a legal basis for requiring information on CO_2 emissions to be part of the application nor is there a reason for the Illinois EPA to perform an independent evaluation for emissions of CO_2.

While emissions of CO_2 and greenhouse gases were not addressed during permitting of this project, this does not mean that they are not of concern, only that the permit for this project is not currently a means by which they can be addressed. In particular, in 2006, Governor Blagojevich announced a climate change initiative by the State of Illinois to address emissions of greenhouse gases, to build on Illinois' role as a national leader in protecting public health and the environment. The Illinois Climate Change Advisory Group has evaluated a full range of policies and strategies to reduce Illinois' emissions of greenhouse gases and is finalizing its report to Governor Blagojevich. This initiative marks the beginning of serious efforts by Illinois to address global climate change and builds on steps that Illinois was already taking to lower emissions of greenhouse gases, such as providing incentives for energy efficiency and encouraging the use of wind power and biofuels.

At the same time, until specific regulations are put into place by Illinois or on a national level, ad-hoc action to address global warming by projects like this proposed project through conventional environmental permitting programs would be capricious. Even if such action were taken, it would probably provide only illusory benefits, as it would not reach or affect existing sources, which contribute the majority of emissions of concern. Such action might also have a stifling effect on the continuing development and deployment of new technology to improve energy efficiency and reduce emissions of greenhouse gases, such as use of cogeneration technology, as will occur with this project.

28. The federal Clean Air Act requires the Illinois EPA to set Best Available Control Technology (BACT) limits in the permit for the proposed cogeneration boiler for emissions of CO_2 and other greenhouse gases from the project. This is because a PSD permit for a proposed major modification must set BACT limits for each pollutant subject to regulation under the Clean Air Act that would be emitted in a significant amount. In April 2007, the Supreme Court resolved any doubt on this question and held that CO_2 and other greenhouses gases are air pollutants under the Clean Air Act.[34] Moreover, the Court's ruling

[34] In Massachusetts v. EPA, 127 S. Ct., the Supreme Court found that "The Clean Air Act's sweeping definition of "air pollutant" includes 'any air

> makes clear that CO_2 and other greenhouse gases are "subject to regulation" under the Clean Air Act. The Supreme Court's ruling is important here because the Court held that the definition of "air pollutant" in the Clean Air Act encompasses CO_2 and other greenhouse gases Second, the Court's held that the USEPA has the statutory authority to regulate the emissions of these pollutants, which indicates that they are "subject to regulation" under the Clean Air Act.

This comment reflects a flawed understanding of the United States Supreme Court's ruling in *Massachusetts v. EPA*, 127 S.Ct. 1438, 167 L.Ed.2d 248 (2007). According to the comment, the Supreme Court's ruling in the *Massachusetts* decision established that "greenhouse gases are 'subject to regulation' under the Clean Air Act." However, this assertion is not supported by even the most basic reading of the Court's opinion. The facts in the case centered around USEPA's refusal to grant a rulemaking petition, initiated by states and other interested parties under Title II of the Clean Air Act, that proposed mobile source emissions standards for CO_2. In support of its decision, USEPA argued, among other things, that greenhouse gases did not fall within the scope of the definition of "air pollutant" in the Clean Air Act and that the overall statutory scheme of the Clean Air Act did not evidence congressional intentions to regulate such gases. The Supreme Court rejected USEPA's argument, finding instead that CO_2 and other greenhouse gases fell within the "capacious definition" of "air pollutant" in the Clean Air Act. *See, Massachusetts v. EPA,* 127 S.Ct. at 1462. As such, the Court rejected USEPA arguments and found that USEPA possessed the necessary authority to regulate greenhouse gases emitted by new motor vehicles.

However, while the Court's ruling recognized that CO_2 emissions may be considered an air pollutant, USEPA has yet to make any final judgment that CO_2 emissions cause "air pollution" under Title II of the Clean Air Act or, more relevant here, under the PSD program found in Title I.[35] Moreover, the Court's ruling does not address or give meaning to the phrase "subject to regulation." The thrust of this comment is that CO_2 is "subject to regulation" and, hence, that emissions of CO_2 must be addressed with a BACT limit. However, the Supreme Court's ruling, while significant in its own right, did not directly address this issue. In this regard, the phrase

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pollution agent or combination of such agents, including any physical, chemical ... substance or matter which is emitted into or otherwise enters the ambient air …' §7602(g) (emphasis added). On its face, the definition embraces all airborne compounds of whatever stripe, and underscores that intent through the repeated use of the word 'any.'" p. 1438

"Carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons are without a doubt "physical [and] chemical . . . substance[s] which [are] emitted into . . . the ambient air. The statute is unambiguous." p. 1460.

[35] The Court's ruling clearly says as much, observing throughout the majority opinion that the first step for initiating a Title II rulemaking (i.e., a finding of endangerment) has yet to occur. *See,* 127 S.Ct. at 1459 ("… the first question is whether §202(a)(1) of the [CAA] authorizes EPA to regulate greenhouse gas emissions from new motor vehicles *in the event* that it forms a 'judgment' that such emissions contribute to climate change {emphasis added})."

"subject to regulation" is not the same as the term "air pollutant." The terms are plainly different and possess separate usages, each denoting a different thing or concept. An attempt to blur one term with the other would render one or the other term superfluous. The proper meaning of the phrase "subject to regulation" must rest on its own statutory construction, rather than on the clarification of the meaning of the term "air pollutant" provided by the *Massachusetts* ruling.

29. BACT limits must also be established for the project's emissions of CO_2 because CO_2 is also "subject to regulation" under the Clean Air Act as CO_2 is already regulated under the Act's acid rain provisions.[36] Recordkeeping and reporting requirements constitute "regulation," so CO_2 is currently regulated under the Clean Air Act. A position that CO_2 is not "subject to regulation" because neither USEPA nor Illinois has yet set standards for CO_2 emission is unfounded. USEPA has stated: "Technically, a pollutant is considered regulated once it is subject to regulation under the Act. A pollutant need not be specifically regulated by a Section 111 or 112 standard to be considered regulated." USEPA, Change to Definition of Major Source, 66 FR 59161, 59163 (Nov. 27, 2001)

This comment is also based upon a flawed understanding of the meaning of the phrase "subject to regulation" as found in both the Clean Air Act and in the definition of "regulated NSR pollutant" in the PSD rules. The comment contends that the phrase "subject to regulation" cannot be restricted to pollutants for which emission standards have not been developed. To support this position, the comment refers to language in the preamble from rulemaking by USEPA, "Technically, a pollutant is considered regulated once it is subject to regulation. A pollutant need not be specifically regulated by a Section 111 or 112 standard to be considered regulated." *See, 66 FR 59161, 59163* (Nov. 27, 2001). However, the quoted language merely states the unremarkable proposition that once emissions of a pollutant from one category of emission unit are regulated by adoption of emission standards for such units, emissions of that pollutant are considered to be regulated as a general manner. Emission standards do not need to be adopted for the emissions of the pollutant from other categories of emission units for emissions of the pollutants from those other units to also be considered regulated. The quoted passage does not support the broader interpretation argued for in the comment. In addition, a look at context reveals the comment's misplaced reliance on this statement by USEPA.[37]

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[36] In 1993, USEPA promulgated regulations requiring coal-fired power plants to monitor CO_2 emissions and report data to USEPA. 40 CFR Part 75. The regulations generally require monitoring of CO_2 emissions through the installation, certification, operation and maintenance of a continuous emission monitoring system or an alternative method, 40 CFR 75.1(b) and 75.10(a)(3), maintenance of certain records, 40 CFR.75.57, and reporting of information to USEPA, including electronic quarterly reports of CO_2 emissions data, 40 CFR 75.60 through 75.64.

[37] **The passage is from rulemaking that involved USEPA rules for implementation of permitting under Title V of the Clean Air Act and proposed changes to the definition of "major source" dealing with the catch-all source categories regulated by Sections 111 and 112 of the Clean Air Act. In**

The USEPA considers the phrase "subject to regulation" in the Clean Air Act and the PSD rules to address those pollutants for which substantive emission limits (or actual control requirements) are established, rather than, as suggested by the comment, any manner of requirements. This usage is well established. For example, USEPA issued a guidance document in 1993 that discussed the types of pollutants "subject to regulation" under the Clean Air Act.[38] *See,* Memorandum from Lydia N. Wegman, USEPA's Office of Air Quality Planning and Standards to USEPA's Air Division Director for Regions I-X, dated April 26, 1993. In the memorandum, USEPA confines its discussion of regulated pollutants to pollutants for which emissions standards have been adopted or, more precisely stated, involve the "actual control of emissions." Significantly, in that same memorandum, USEPA expressly declined to consider CO_2 a regulated pollutant, notwithstanding certain elements of the acid rain program calling for the study and reporting of CO_2. This shows that the USEPA has applied the term "subject to regulation" to mean actual control of emissions. This has not occurred for CO_2 emissions under the acid rain program, which only provides for reporting of data for CO_2 emissions. The USEPA's usage for the phrase "subject to regulation" is also confirmed by actions by USEPA in other rulemakings.[39]

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context, it is clear that USEPA was addressing a particular comment that interpreted part of the proposal to allow for the counting of fugitive emissions for unregulated pollutants in making a major source determination. The affected proposal sought to delete the phrase "but only with respect to those air pollutants that have been regulated for that category" from the catch-all provision for all other source categories regulated under Sections 111 and 112. *See, 40 CFR 70.2(2)(xxvii).* USEPA's response sought to allay concerns that deleted language from the rulemaking proposal would introduce "unregulated" pollutants into major source deliberations. In this regard, the underlying rationale of USEPA's quotation was twofold: first, that only "regulated" pollutants (i.e., those pollutants subject to regulation") can be considered in the major source determination, and second, that pollutants other than those captured by the catch-all source categories (i.e., categories regulated by Sections 111 and 112) are capable of making a source major under Part 70. This interpretation is further supported by USEPA's citation to another rulemaking, which immediately followed the last sentence in the quotation but is not referenced by the commenter's excerpt. In a proposal to revise requirements for the New Source Review programs, USEPA discussed several pollutants promulgated under Section 112 that were no longer subject to the PSD program's requirements and, conversely, identified a list of regulated pollutants that remained subject to the program, including those pollutants comprising the NAAQS and substances regulated by Title VI.

[38] The memorandum addressed this issue in the context of Title V permitting, however, the document confirmed the similarities in treatment with the PSD program.

[39] USEPA also adopted amendments to the PSD rules in 2002 that specifically defined the term "regulated NSR pollutant." *See,* 67 FR 80186 (December 31, 2002). The definition contains four categories of pollutants, three of which comprise pollutants that are specifically addressed by USEPA under significant rulemaking provisions of the Clean Air Act (i.e., NAAQS, NSPS and Title IV). The fourth category of the definition is a catch-all provision

Finally, even assuming for purposes of argument that the statutory language is ambiguous, "subject to" and "regulation" are words of general usage and the particular meaning of terms can be either broadened or curbed depending upon the desired application. In the absence of clarity, an administrative agency charged with implementing a particular statute is afforded discretion in construing congressional text and that discretion is usually not disturbed by courts unless the agency's construction is found unreasonable.

30. The PSD rules require a major modification to comply with a BACT limit "for each regulated NSR pollutant for which it would result in a significant net emissions increase…."40 CFR 52.21(j)(3). For any regulated NSR pollutant that is not listed at 40 CFR 52.21(b)(23)(i), the significance level is "any net emission increase." 40 CFR 52.21(b)(23)(ii). CO_2 and other greenhouse gases are not listed. Therefore, a BACT limit is required for any net increase. As the cogeneration boiler project will emit CO_2 and other greenhouse gases, the significant emission threshold is satisfied.

As explained in response to earlier comments, CO_2 and other greenhouse gases are not currently pollutants under the PSD program. Moreover, it is not clear that the proposed project will actually result in net increases in emissions of CO_2 and other greenhouse gases. The project will be accompanied by decreases in emissions of these pollutants from the ten existing boilers that the cogeneration boiler will replace. In this regard, the cogeneration boiler will not directly affect the production of blast furnace gas at the Granite City Works, as blast furnace gas is a normal byproduct inherent in the operation of the blast furnaces. In addition, the blast furnace gas that is produced will be used more efficiently as it will be used for cogeneration of both electricity and steam.

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that covers "[a]ny pollutant that *otherwise* is *subject to regulation* under the Act…(emphasis added)" *See,* 40 CFR. §52.21(b)(50)(iv). It is this provision that the comment relies on to argue that CO_2 is "otherwise regulated" and is therefore subject to PSD. The argument is plainly mistaken. That each of three specific references in the definition would share a common characteristic (i.e., substantive emission standards or actual controls) lends considerable support for interpreting the catch-all category in a like manner. Not only is such an approach grammatically correct but is also consistent with legal principles employed by courts in construing laws and regulations. (i.e., the rule of *ejusdem generis*). To that end, the pollutants covered by the catch-all category, like those enumerated in the three preceding categories, must be pollutants for which substantive emission standards (or actual controls requirements) have been adopted. Moreover, a list of pollutants accompanying USEPA's final rulemaking identified those pollutants that were then regulated under the Clean Act and potentially subject to the PSD rules. The list did not include CO2 or, for that matter, any other pollutant not already subject to substantive emission standards pursuant to the Clean Air Act.

31. I am concerned about the new flare that would be part of the cogeneration project. More protective limits on flaring should be required.

The permit contains provisions to address proper operation of the new flare, including that it be specifically designed for disposal of blast furnace gas and be operated to minimize visible emissions, consistent with the requirements of 40 CFR 60.18(f)(1). Because this new flare is part of the blast furnace gas fuel system, the flare would not pose the concerns that are potentially present with a flare that handles over-pressure and emergency releases from process units.

32. The draft permit would set combined limits for fuel usage and emissions for two independent units, the boiler and the flare. Although there are fuel usage limits for the flare, the emission limits in Condition 3.1.6(b)(ii) do not distinguish between emissions from the boiler and the flare. As such, it will be virtually impossible to ensure that the boiler and the flare are in compliance with these emission limits. This does not satisfy the requirement that permit limits be enforceable as a practical matter.

The emissions from the cogeneration boiler and the flare are appropriately limited with combined limits for different pollutants. This is because these units will operate together, in tandem, to handle BFG produced by the blast furnaces at the Granite City Works that is currently handled by the ten existing boilers that will be shut down. The Illinois EPA disagrees with the assertion that "it will be virtually impossible to ensure that either the boiler or the flare is in compliance with the permit's emission limits." The permit requires detailed recordkeeping for the operation of each unit, including monthly records of fuel usage. This data, and appropriate emissions factors, as developed from stack testing of the boiler or standard USEPA emission factors, would be used to determine emissions of each unit. Finally, if testing of the boiler does not show compliance with the applicable limits in pounds per million Btu for NOx or CO by a margin of at least 5 percent, the permit includes provisions that could require that continuous emissions monitoring be conducted.

33. Illinois' Environmental Protection Act invites Illinois EPA to consider an applicant's prior compliance history when evaluating permit applications. It also allows the Illinois EPA when granting permits to "impose reasonable conditions specifically related to the applicant's past compliance history…as necessary to correct, detect, or prevent noncompliance." Section 39(a) of the Act. In this case, to the best of my knowledge, an Illinois EPA-initiated enforcement action for air pollution violations at the Granite City Works is currently pending in the Illinois courts and is unresolved. Accordingly, Illinois EPA should impose conditions in this permit to cure US Steel's longstanding air pollution violations before authorizing it to construct yet additional emission units.

For the proposed cogeneration boiler project, the issued permit for the project, which is narrowly focused on the proposed project, is not an appropriate means to broadly address and correct compliance issues that have

been posed by existing emission units at the Granite City Works. As noted by the comment, alleged violations by existing units at the source have been the subject of an enforcement action. This enforcement action was resolved on December 18, 2007, with the issuance of a Consent Order for the source. (See: People of the State of Illinois v. United States Steel Corporation, Inc., Illinois 3rd Circuit, No. 5-CH-750.) As compared to conditions imposed in a construction permit for unrelated emission units, this order, whose development was coordinated by the Illinois Attorney General's Office, is the preferable means of establishing the specific measures that must be implemented to address the various alleged violations at this source.

34. There are hundreds of young children with asthma in Granite City and neighboring Madison and Venice. There are thousands of our people with lung and heart disease.

The presence in the area of children and adults with respiratory diseases, including asthma, and other diseases affected by poor air quality is an important issue. However, it is not a basis to refuse to grant a permit for the proposed cogeneration boiler project, as the application for the project shows that it will comply with applicable regulatory requirements. The poor air quality that poses a threat to individuals that are at particular risk is the cumulative result of emissions from the variety of existing sources that contribute to air pollution in urban areas, including manufacturing facilities, power plants, trucks, buses, cars, and the activities of individual households. On a long-term basis, emissions have been reduced and regulatory programs are ongoing to further reduce the emissions from these sources. This is appropriate and necessary because continuing improvements in urban air quality require that existing sources be better controlled or replaced with new, lower emitting sources.

At the same time, efforts also continue to be made to improve public awareness of daily air quality levels. This is particularly important for individuals with asthma or other chronic respiratory diseases because, in addition to other medical care and treatment, it allows such people to take appropriate measures to reduce any added risk to their health posed by poor air quality, by reducing time spent outdoors, avoiding physical exertion, and taking any extra medications that are prescribed during such conditions. To assist asthmatic individuals and others who are particularly sensitive to ambient air quality, the Illinois EPA uses the Air Quality Index to report air pollution levels on a daily basis. This enables people who may be affected by poor air quality to appropriately plan and adjust their activities.

35. The ambient air quality monitors in Granite City measure the highest levels of $PM_{2.5}$ in the state and some of the highest in the Midwest. This is because of the Granite City Works. On a list prepared by the American Lung Association, which is on its web site, Granite City is the tenth most polluted in particle pollution.

The ambient monitoring stations operated by the Illinois EPA in downtown Granite City near the Granite City Works do measure the highest levels of $PM_{2.5}$ in the state. These monitors are specifically sited to address the impact of the Granite City Works on particulate matter air quality. Illinois and USEPA

are legally required by the federal Clean Air Act to ensure that air quality for $PM_{2.5}$ improves so that the air quality measured at these monitors complies with the NAAQS for $PM_{2.5}$.

36. US Steel's Granite City Works is responsible for the entire St. Louis region not meeting the NAAQS for $PM_{2.5}$.

This is not correct. While the Granite City Works may have a critical role on $PM_{2.5}$ air quality in Granite City, $PM_{2.5}$ air quality across the Greater Metropolitan St. Louis area is the combined result of the emissions of many sources, which share responsibility for the area violating air quality standards and being nonattainment. This is also the situation for air quality in Granite City, which is affected by the regional levels of air quality that exist in the St. Louis area. In this regard, there have been significant improvements in recent years in the $PM_{2.5}$ air quality measured on an annual basis in Granite City due to improvements in the regional air quality in the St. Louis area.

37. Why did the Illinois EPA hold a separate public hearing for the proposed cogeneration boiler project, instead of combining it with the public hearing for the coke oven plant project proposed by Gateway Energy?

The Illinois EPA held two public hearings because it was believed that it would help distinguish and differentiate between the two projects. In particular, the nature of the projects is different as the cogeneration boiler project would replace existing boilers, whereas the coke plant project would increase the source's capacity for production of coke. There are also significant differences in the regulatory requirements that apply to the projects, with the cogeneration boiler project not being a major project under NA NSR and PSD and the coke oven plant project being major for emissions of particulate matter.

38. It was not clear at which public hearing people could comment on which project. Also, since some people could not come both nights, is there some way that the Illinois EPA could just take the transcript of this hearing for the cogeneration boiler project and also apply it to tomorrow night's hearing for the proposed coke plant?

The subject of each hearing was clearly identified. Oral comments made at the hearing for the cogeneration boiler project will only be entered into the record for this project. A person who could only attend one hearing (or could not attend either hearing) could provide their comments in writing. Written comments submitted have just as much weight as oral comments made during a public hearing.

39. Can people get answers to their questions that were not answered at the hearing in time so that they can consider those answers in preparing their written comment?

The Illinois EPA responds to questions and comments made during the comment period in the responsiveness summary issued at the time a permit decision is made after the close of the comment period. If there are unanswered

questions that a person wants an answer to for the formulation of their comments, that person should contact the Illinois EPA contact listed in the notice prior to the end of the comment period to see whether the desired information can be made available sooner.

40. At the public hearing, the Hearing Officer indicated that US Steel would be submitting written answers during the public comment period to the questions asked at the hearing. Will people have an opportunity to obtain a copy of the US Steel's answers and review them during the comment period?

US Steel did not choose to respond to any of the comments or questions made at the public hearing. As a legal matter, US Steel is not required to provide answers to the questions asked by the public during the hearing. If US Steel had responded, its responses would have been part of the public record and a copy could have been obtained from the Illinois EPA with a request under the Freedom of Information Act.

General Comments

1. With the new modern facility operating in compliance with environmental protection laws and the new standards for fine particulates that are being developed, my family and the workers at the Granite City Works should be healthier, US Steel will be healthier, and Granite City should prosper.

2. The existing boilers go back to the 1920s. These boilers have reached the end of their useful life and it is essential that they're replaced with a modern system, not only to continue the production of iron at the blast furnaces but also for the safety of the workers.

3. Granite City officials are looking forward to the rebuild of McKinley Bridge to bring new residents and economic growth to the city but people do not want to live and businesses do not want to relocate to one of the most polluted cities in the Midwest.

4. The Granite City Works has been an integral part of the Granite City community for over 100 years. Without the mill, the area would certainly suffer economically.

5. This project is important to keep the Granite City Works viable steel making facility.

6. US Steel needs the electric power that this project is going to generate.

For Additional Information

Questions about the public comment period and permit decision should be directed to

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LISTING OF SIGNIFICANT CHANGES
BETWEEN THE DRAFT PERMIT AND THE ISSUED PERMIT

Condition 2.2.1: This condition, which addresses applicability of NA NSR and PSD for the proposed cogeneration boiler facility, has been expanded to explain the approach taken to address applicability of NA NSR for emissions of $PM_{2.5}$ and the implications for the condition of the permit.

Condition 2.6(a): This condition, which addresses emission decreases that were addressed in a construction permit for Emission Reduction Projects (Construction Permit 06070022), has been expanded to specifically require shut down of existing Boilers 1 through 10 and assure that the associated emissions decreases occur in a timely manner so that the proposed facility is not a major project.

Condition 3.1.5(a): Requirements related to control of particulate matter emissions are corrected to address only filterable particulate, rather than total particulate, so as to be consistent with the underlying information in the application.

Condition 3.1.5(c): A condition is added to require the operation of the proposed facility to operate as a cogeneration facility for the benefit of US Steel's Granite City Works, as the project is described in the application, rather than as a facility whose main purpose is to generate electricity to be put on the power grid and sold.

Condition 3.1.6(b): Limits for emissions of hazardous air pollutants (HAPs) (i.e., limits for HAP metals and total HAPs) are added for the cogeneration boiler and flare to better assure that these two units, by themselves, are not major for emissions of HAPs.

Condition 3.1.7: Provisions are added to this condition, which addresses emission testing of the cogeneration boiler, to also require testing for emissions of volatile organic material (VOM), as the boiler will emit VOM and limits on VOM emissions are being used to address emissions of organic HAPs.

Condition 3.1.7(b): Provisions are added to address testing of emissions of HAP metals from the cogeneration boiler if the Permittee chooses to directly test such emissions rather determine such emissions from data for PM emissions and the composition of the particulate matter in blast furnace gas (BFG).

Condition 3.1.8-2: Conditions are added requiring sampling and analysis of BFG and the material collected by the BFG pretreatment system to address requirements limiting the loading of particulate in cleaned BFG and the emission of HAP metals from the burning of BFG and to support the determination of SO_2 emissions from the proposed facility.

Attachment 1: Corrections made to the summary of emissions and netting for this proposed facility to show that this project is not major for particulate matter. Other clarifying changes were also made to this Attachment.