

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
BUREAU OF AIR  
PERMIT SECTION

Response to Comments on the Planned Issuance of a  
Revised Clean Air Act Permit Program (CAAPP) Permit to  
U. S. Steel Corporation, Granite City Works  
Granite City, Illinois

Source I.D. No.: 119813AAI  
Permit No.: 96030056

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## **DECISION**

On May 2, 2011, the Illinois EPA issued a revised Clean Air Act Permit Program (CAAPP) permit to United States Steel - Granite City Works (US Steel) in Granite City, Illinois.

In response to comments received during the public notice period, the issued permit includes a number of additional requirements as compared to the revised permit that the Illinois EPA planned to issue.

## **BACKGROUND**

US Steel operates an integrated iron and steel mill in Granite City, Madison County, Illinois. Because of the type and quantity of emissions generated by this source, US Steel is required to obtain an operating permit under Illinois' Clean Air Act Permit Program ("CAAPP") administered by the Illinois EPA.

The CAAPP generally requires that major stationary sources of regulated air pollutants apply for and obtain a CAAPP permit for their operations. CAAPP permits contain conditions identifying all applicable requirements under the federal Clean Air Act ("CAA") and the state Environmental Protection Act ("Act"). Testing, monitoring, compliance procedures, recordkeeping and reporting requirements are also established, as required or necessary, to assure compliance and accomplish the purposes of the Illinois CAAPP. The terms and conditions of a CAAPP permit are enforceable by the Illinois EPA, USEPA and the public.

The Illinois EPA previously issued a CAAPP permit to US Steel on September 3, 2009. A public petition requesting an objection to the permit was filed with USEPA on October 1, 2009. On January 31, 2011, USEPA took final action on the petition, granting it in part and denying it in part. Following a review of USEPA's Order responding to the petition, consideration of comments from US Steel and the public, the Illinois EPA is now issuing a revised CAAPP permit to US Steel. The revised CAAPP permit issued US Steel identifies the applicable requirements governing emissions from its Granite City Works, and establishes enforceable limitations on its emissions. The permit also establishes appropriate compliance procedures, including requirements for emissions testing, continuous emission monitoring, recordkeeping, and reporting.

## **OPPORTUNITY FOR PUBLIC COMMENTS**

The issuance of this revised CAAPP permit was preceded by a 10-day comment period in accordance with Section 39.5(9)(g) of the Act. This comment period began March 16, 2011 and ended March 25, 2011. Before the comment period, the Illinois EPA made available a copy of the revised CAAPP permit that it planned to issue. The planned revised CAAPP permit and a Statement of Basis were mailed to persons who participated in the earlier comment period. These documents and other relevant documents were also provided to the Six Mile Regional Library District in Granite City to be made available for review by the public at its library in Granite City.

## **AVAILABILITY OF DOCUMENTS**

Notice of the issuance of this revised CAAPP permit is being mailed to persons who participated in the recent comment period. The issued permit and this Response to Comments will also be made available for reviewing by the public at

the Illinois EPA's Regional Office in Collinsville [618/346-5120] and at the main library of the Six Mile Regional Library District in Granite City [618/452-6238]. A printed copy of the documents can be obtained free of charge by contacting Brad Frost at the Illinois EPA's Springfield headquarters by telephone [888/372-1996 Toll Free - Environmental Helpline; 217/782-7027 - desk line; 217/782-9143 - TDD], by facsimile [217/524-5023] or by email [brad.frost@illinois.gov].

## **COMMENTS ON PARTICULAR SUBJECTS WITH RESPONSES**

### **Periodic Monitoring**

1. Section 504(c) of the Clean Air Act requires that Title V permits contain Periodic Monitoring sufficient to assure compliance with permit terms and conditions.<sup>1, 2</sup> The Periodic Monitoring required for several emission limits by the planned revised CAAPP permit, as discussed in detail in some of my comments, would not be "sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit." 40 CFR 70.6(a)(3)(i)(B). The revised CAAPP permit that is issued should remedy these deficiencies so that all permit limits are accompanied by adequate Periodic Monitoring.

**Response: The Illinois EPA has considered the specific comments that were submitted on Periodic Monitoring. As discussed by the Illinois EPA in its responses to individual comments, as these comments identified deficiencies in the planned provisions for Periodic Monitoring, the revised CAAPP permit that has been issued includes appropriate revisions. In addition, as comments suggested reasonable enhancements to provisions for Monitoring that were sufficient, enhancements to those Periodic Monitoring requirements were also made.**

2. Emission factors are used to determine compliance with a number of limits on annual emission in the CAAPP permit. It is understood that, at times, the use of emission factors is an acceptable method of estimating emissions from certain emission units. However, as the Statement of Basis observes, "When emission factors are used to calculate emissions, the critical element of the calculations is the emission factors that are selected for use." Statement of Basis at 23. Thus, it is essential that all emission factors used to assure compliance with permit limits include

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<sup>1</sup> See also 40 CFR 70.6(a)(3)(i)(A), (a)(3)(i)(B) and (c)(1).

<sup>2</sup> As described by the D.C. Circuit Court of Appeals, *Sierra Club v. EPA*, 536 F. 3d 673 (D.C. Cir. 2008), Periodic Monitoring arises in three contexts:

1. Where existing regulations or underlying permits prescribe monitoring that is appropriate to the timeframe of the emission limit and sufficient to assure compliance, the permitting authority places that monitoring requirement in the permit. 40 CFR 70.6(a)(3)(i)(A); see 536 F.3d at 675.

2. Where there is no previously-established monitoring requirement to correspond to an emission limit, the permitting authority must create one that is appropriate to the timeframe of the emission limit (periodic) and sufficient to assure compliance with the limit. 40 CFR 70.6(a)(3)(i)(B); see 536 F.3d at 675.

3. Where there exists a previously-established monitoring requirement corresponding to an emission limit, but it is not adequate to assure compliance with the limit, the permitting authority (or EPA) must augment the monitoring in the Title V permit to ensure that it is both periodic and assures compliance with the emission limit. 40 CFR 70.6(c)(1); see 536 F.3d at 678, 680.

supporting documentation in the permit record. Unfortunately, this is not the case. The use of unsupported emission factors to assure compliance with permit limits fails to satisfy Periodic Monitoring requirements and must be remedied before the issuance of a revised CAAPP permit.

**Response:** The revised CAAPP permit would require documentation or support for the emission factors that US Steel uses to determine actual emissions for the purpose of verifying compliance with permit limits on emissions. It is not necessary for the documentation for these emission factors, which are used to assure compliance with permit limits, to be in the permit record, as suggested by this comment. As these emission factors could and must change as necessary to assure that they do not understate actual emissions, the issue is whether the emission factors used by US Steel at any time during the term of this CAAPP permit are accompanied by documentation or showing that they do not understate actual emissions at such time.

In this regard, this comment and other comments related to emission factors appear to reflect a misunderstanding about the specific, numerical "emission factors" in the revised CAAPP Permit. While expressed in terms of pounds of emissions per ton of throughput, these "factors" are appropriately considered limits on the emissions of the subject operations, similar to the limits on annual emissions from those operations, which are expressed in tons per year,. Construction Permit 95010001, which is the origin of many the permit limits in the CAAPP permit, is instructive in this regard. Construction Permit 95010001 does not indicate that compliance with its limits for annual emissions are to be determined using these emission factors.<sup>3, 4</sup> Moreover, the revised

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<sup>3</sup> While Construction Permit 95010001 does not explain how compliance with permit limits for annual emissions should be determined, it is evident that the "emission factors" in this permit are limits from the structure and language of this permit. These factors, which are present in tables at the back of that permit, are referenced by and made effective and enforceable by conditions in the body of the permit. For example, Condition 5 of Permit 95010001 states "Emissions from blast Furnace operations shall not exceed the limits in attached Tables 1 and 5." For different subject blast furnaces operations and various pollutants, Table 1 includes values or limits for Emission Factors (Lbs/Ton) and Maximum Emissions (Tons/yr). Neither Condition 5 nor Table 1 include language that would suggest that only the values for maximum emission should be considered limits and enforceable requirements under Permit 95010001.

In addition, if the emission factors in Table 1 and other tables had been intended to function only as "traditional" emission factors for purposes of determining emissions, they should have been included in the procedures in Permit 95010001 for compliance determinations (Conditions 32 through 34 of the permit). For example, Condition 34(c) establishes such a factor, "BFG usage shall be calculated based on 0.005846 mmft<sup>3</sup> BFG generated per net ton of hot metal produced." The factors for emissions are not part of the compliance procedures in this permit

<sup>4</sup> That the emission factors in Construction Permit 95010001 are enforceable limits may also be inferred by considering their implications. As limits, they add to the rigor of Permit 95010001. Since the source usually does not operate at its permitted production each year, as enforceable limits, the factors limit the emissions of the source in proportion to the actual level of production in each year. For example, if in a given year, the source actually produces only 80 percent of its maximum permitted production, the emission factor limits restrict the actual emissions in that year to no more than 80 percent of the maximum annual emissions. If the emission factors were traditional emission factors, rather than limits, the source's annual emissions in any year would not be limited in this manner, and would only be restricted to the maximum emissions, independent of the actual level of production in a year.

Indeed, if the emissions factors in Permit 95010001 were not limits, the operation of the subject units would effectively have only been constrained by the limits in the

CAAPP permit does not indicate that compliance with the annual emission limits is to be determined using the "emission factors" in the permit. Rather, the revised permit requires recordkeeping for the actual emission factors that are used on a routine basis to determine actual emissions, in the manner that emission factors are commonly understood, for comparison to applicable permit limits.

3. In its Petition, ABC highlighted concerns with the CAAPP permit's use of emission factors from unspecified sources to assure compliance with permit limits. USEPA addressed this concern in its Order responding to the Petition:

The record for the USS permitting action does not specify the origin of the emission factors. It is not clear whether the emission factors used by IEPA are indicative of the emissions at USS's facility ... IEPA either must justify in the record why these emission factors are representative of USS's operations (i.e., representative to yield reliable data from the relevant time period representative of the sources [sic] compliance), and provide sufficient evidence to demonstrate that the emissions will not vary by a degree that would cause an exceedance of the standards, or Illinois EPA must determine and adequately support another mechanism to assure compliance with the applicable emission limits from the underlying construction permit. USEPA Order at 14.

Despite USEPA's directive, the permit record continues to lack supporting documentation for many of the emission factors included in the CAAPP permit, including several emission factors from the Production Increase Permit, Construction Permit 95010001.

**Response:** In the planned revised CAAPP permit, the Illinois EPA has proceeded as directed by USEPA in the Order. Rather than attempt to justify in the permit record that the emission factors in the permit are indicative of US Steel's actual emissions, the planned revised permit would use another approach to assure compliance with the applicable emission limits established in construction permits. In this regard, it is noteworthy that even if the Illinois EPA were able to justify the emission factors in the permit, the Order also directs the Illinois EPA to include provisions in the permit to confirm the appropriateness of those emission factors.

Furthermore, if IEPA can adequately justify the use of emission factors as a compliance mechanism, it should also require USS to confirm the appropriateness of the emission factors such as through the use of stack testing using EPA-approved methods on a periodic basis, as operations and equipment change or deteriorate over time. USEPA Order at 14.

As already observed elsewhere by this commenter, the planned approach to Periodic Monitoring for permit limits was discussed in pages 23 through 26 of the Statement of Basis. The Periodic Monitoring for limits on

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permit for maximum annual production. If the annual limits on production were not exceeded, the limits on maximum annual emissions would never be exceeded. This is because the limits for maximum annual production are the product of the limits on annual production and the emission factors. The limits on maximum annual emissions would only serve to reinforce the limits on annual production without having any separate and independent role.

emissions established in construction permits would be provided by the Monitoring that would be required for these emission units related to applicable regulatory standards and other emission control requirements, together with specific recordkeeping for the emissions factors and "throughput" of the units (i.e., the amount of material handled by these units or hours of operation).<sup>5, 6</sup> The Statement of Basis also discusses changes to these "established" emission factors, explaining that these changes would also be required to be documented, with explanation and supporting data, and linked to a particular date. A change to the established emission factor that the source uses would be mandatory, with adoption of a new established emission factor, if it is determined that the current emission factor would understate actual emissions.

4. Of particular concern is the inclusion in the planned revised CAAPP permit of unsupported emission factors for uncaptured emissions from emission units such as the blast furnaces and basic oxygen furnaces (BOF). The Statement of Basis provides the results of emission tests to show that emission factors for units such as the BOF ESP stack, Casthouse Baghouse, and Iron Spout Baghouse are not likely to underestimate emissions. However, given the nature of uncaptured emissions, there is no comparable test data available with which to evaluate the appropriateness of emission factors for uncaptured emissions. Nevertheless, the inability to directly measure uncaptured emissions does not excuse the use of unsupported emission factors in the permit.

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<sup>5</sup> As explained in the Statement of Basis, "As a general matter, the Periodic Monitoring for limits on emissions established in construction permits would be provided by the Monitoring that would be required for these emission units related to applicable regulatory standards and other emission control requirements, together with specific recordkeeping for the emissions factors and "throughput" of the units (i.e., the amount of material handled by these units or hours of operation). Recordkeeping would also be required for the determination of the actual amounts of emissions, for direct comparison to the applicable permit limits. The Periodic Monitoring for the operation of the subject emission units as related to other applicable requirements would verify proper operation of the units and serve to confirm that established emission factors for such units are appropriately used to determine the amount of emissions. The presence of these limits on the amount of emissions from such units does not necessitate additional or more frequent Monitoring for the operation of these units. As emissions of the units would be calculated using emission factors, the other information needed to determine actual emissions is their throughput or amount of material that is handled, with the actual emissions being the product of the applicable emission factor and the throughput or activity of a unit. ... The Periodic Monitoring specifically for permit limits on the amount of emissions would entail the necessary records for the throughput of the subject units. The Monitoring would also include recordkeeping for the calculated emissions, as needed for direct comparison to the established permit limits."

<sup>6</sup> As also discussed in the Statement of Basis, "The exception to this practice would be pollutants for which the emissions of a pollutant from emission units are determined by a "material balance" approach. In particular, when a sulfur containing fuel is used, the emissions of sulfur dioxide (SO<sub>2</sub>) are calculated from the sulfur content of the fuel and the amount of fuel that is used. In the absence of add-on control equipment for SO<sub>2</sub> emissions (or the presence of sorbent materials in the flue gas of a unit that act to abate SO<sub>2</sub> emission), the SO<sub>2</sub> emissions of a unit may be directly calculated from the sulfur contained in the fuel. As the molecular weight of SO<sub>2</sub> is twice that of sulfur, the SO<sub>2</sub> emissions of a unit are twice the sulfur in the fuel used by the unit.

The circumstances are similar for VOM solvents in coatings and inks. The VOM emissions from use of these materials are often the direct result of the VOM content of the coating. In some cases, this relationship is not quite as simple as some of the VOM originally present in the materials may chemically react in the film of coating or be bound into the substrate."

For example, Conditions 7.4.6(c) and 7.5.6(d) include emission factors for uncaptured emissions from the blast furnaces and the BOF furnaces, respectively. Supporting documentation for these emission factors is not provided in the planned revised CAAPP permit, the CAAPP permit application, the underlying Production Increase Permit, or the Statement of Basis. The permit record contains no information to confirm that the emission factors are representative of emissions of the facility or that the "emissions will not vary by a degree that would cause an exceedance of the standards." However, these emission factors are used to verify compliance with the corresponding permit limits in Conditions 7.4.6(c) and 7.5.6(d).

**Response:** The revised CAAPP permit appropriately addresses these "emission factors" established by the Construction Permit 95010001, including the factors for uncaptured emissions now included in Conditions 7.4.6(c) and 7.5.6(d) of the CAAPP permit. This is because it addresses these factors as emission limits, which are directly applicable to subject operations.<sup>7</sup> The revised CAAPP does not indicate that these "factor limits" are to be used as traditional emissions factors to determine actual emissions for comparison to permit limits for annual emissions. Rather it requires separate records for the actual emission factors, with supporting documentation, that are used to determine actual emissions.<sup>8</sup>

5. The planned revised CAAPP permit would require US Steel to keep a record containing the emission factors used to determine actual emissions from certain units and the supporting documentation for these factors. (For example, refer to Conditions 7.4.9(i)(i) and 7.5.9(f)(i).) However, because this requirement will not apply until after a revised CAAPP permit is issued, it will not inform the determination of whether the use of certain emission factors satisfies Periodic Monitoring requirements prior to the issuance of the permit.

**Response:** This comment does not identify a deficiency in the planned revised CAAPP permit. Rather, it again reflects a flawed understanding of the nature of the "factor limits" in Construction Permit 95010001. When the factors in the revised CAAPP permit are appropriately approached as emission limits, it is apparent that they cannot directly inform the determination of Periodic Monitoring. They are the requirements for which Monitoring must be established. As was addressed for various emission units in the Statement of Basis, the margin of compliance that has been demonstrated in past emission testing, comparing test results to the applicable limit(s), is a relevant consideration when establishing Periodic Monitoring requirements for limit(s).

6. As USEPA stated in its Order, if the Illinois EPA elects to rely on emission factors for purposes of Periodic Monitoring, it must ensure that the emission factors are well-documented. The Illinois EPA must provide

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<sup>7</sup> As already explained, the revised CAAPP permit would require Periodic Monitoring to address compliance with these limits. This Periodic Monitoring would involve Periodic Monitoring for other applicable regulatory requirements, as addressed in the Statement of Basis. The Monitoring would also include the recordkeeping for the actual emission factors used by the Permittee to determine emissions for purposes of comparison to the limits on annual emissions.

<sup>8</sup> These records for actual emission factors would also directly address compliance with the factor limits, as they would be identical terms, pounds of emissions per ton of throughput.

supporting documentation for emission factors used to assure compliance with emission limits prior to the issuance of the permit. If documentation cannot be provided, any unsupported emission factors should be removed from the revised CAAPP permit and replaced with adequate Periodic Monitoring for the applicable limits.

**Response: The changes to the CAAPP permit recommended by this comment would remove applicable requirements from the revised CAAPP permit, not emission factors. In particular, the comment suggests that "factor limits" be removed from the CAAPP permit. However, the comment does not demonstrate that these factor limits do not constitute applicable requirements, as originally established in Construction Permit 95010001 pursuant to Title I of the Clean Air Act. The comment also does not explain how "Periodic Monitoring" could serve as a substitute for these limits. In addition, USEPA's Order does not direct the Illinois EPA to remove these factor limits from the revised CAAPP permit.**

7. The Statement of Basis provides a method to estimate emission factors for uncaptured emissions using the measurement of emissions from emission units with emission control equipment, the efficiency of the control equipment and the efficiency of the capture system. Although this method is discussed in the context of reviewing emission factors after the issuance of a revised CAAPP permit, it also provides a means to determine, to some extent, whether the emission factors in the permit are likely to underestimate actual emissions for Periodic Monitoring purposes prior to the issuance of the permit.

**Response: While the Statement of Basis postulated upon a method to estimate emission factors for uncaptured emissions using the measurement of captured emissions, in light of comments related to this method, it is apparent that this method is not as simple as it might initially appear. However, as is appropriate, the revised CAAPP permit would place the burden for assuring the accuracy of the actual emission factors used for uncaptured emissions, as well as captured emission, upon US Steel.**

8. The use of unsupported emission factors to assure compliance with permit limits is especially concerning if there is reason to believe that the emission factors will underestimate emissions. Based on information in the permit record regarding the blast furnaces and basic oxygen furnaces, I have concerns that the emission factors for uncaptured emission associated with the Production Increase Project, Construction Permit 95010001, may significantly underestimate emissions. In particular, an estimate of uncaptured PM emissions from the casthouse can be derived using the Illinois EPA's approach for review of emission factors and the recent data for testing of the Casthouse and Iron Spout Baghouses, a value for the efficiency of the blast furnace capture system, and values for the control efficiencies of the Casthouse and Iron Spout Baghouses.<sup>9</sup>

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<sup>9</sup> Based on data from recent testing presented in the Statement of Basis, PM emissions from the Casthouse and Iron Spout Baghouses are 0.012 and 0.0068 lb/ton, respectively. Statement of Basis at 88. The CAAPP application indicates that the control efficiencies of the Casthouse Baghouse (CHBH) and Iron Spout Baghouse (ISBH) are 99.25 and 99 percent, respectively. "Air Pollution Control Equipment Data and Information" forms in the CAAPP application. The overall efficiency of the capture system for the casthouse is assumed to be 95 percent, based on the Statement of Basis, which states that "the requirements of the NESHAP for the capture systems on casthouses are commonly considered to provide a minimum of 95% capture of the emissions from tapping of blast furnaces." Statement of Basis at 89.

Using this data, I calculate an emission factor for uncaptured PM emissions of 0.12 lb per ton of iron.<sup>10</sup> This factor is significantly higher than 0.031 lbs/ton, the emission factor in Condition 7.4.6(c) of the revised CAAPP permit.

**Response:** This comment does not demonstrate that an emission factor of 0.031 lbs/ton would understate emissions or that actual emissions exceed 0.031 lbs/ton. Rather, the analysis conducted by this commenter demonstrates the importance of the value that is used for the efficiency of control devices when deriving an emission factor for uncaptured emissions from data for captured emissions. In this regard, it is apparent that the values for control efficiency in the CAAPP application are theoretical or design values and greatly overstate the control efficiency in practice.<sup>11</sup> Using the values for control efficiency that were used by the commenter, the calculated emission factor for uncontrolled emissions from the blast furnace casthouse is 2.4 pounds per ton of iron, a value that is not realistic. It is four times the factor for uncontrolled casthouse emissions, 0.6 pounds per ton, in USEPA's *Compilation of Air Pollutant Emission Factors*, AP-42.

9. My analysis, which yields an emission factor of 0.12 lb/ton for uncaptured PM emissions from the casthouse, also indicates that the factor in the permit may greatly underestimate actual PM emissions on an annual basis.<sup>12</sup> This further suggests that this factor is not representative of actual emissions and fails to assure that the "emissions will not vary by a degree that would cause an exceedance of the standards." Therefore, use of this factor does not assure compliance with the relevant permit limit and does not constitute adequate Periodic Monitoring. The Illinois EPA should remedy this by reviewing and updating the emission factor for uncaptured casthouse emissions prior to issuing a revised CAAPP permit.

**Response:** This comment does not provide further insight into the emission factor for uncaptured PM emissions from the casthouse. It merely

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<sup>10</sup> The emission factor for uncaptured emissions from the blast furnace casthouse can be calculated using the following equation:

Factor = [Tested rate for CHBH x 100/(100 - CHBH control %) + Tested rate for ISBH x (100/(100 - ISBH control %))] x [(100 - capture %)/capture %]

With the available data, this equation yields an factor of 0.12 lb of per ton of iron:

0.12 = [0.12 x 100/(100 - 99.25) + 0.0068 lb/ton x 100/(100 - 99)] x [(100 - 95)/95]

<sup>11</sup> An approximate factor for the uncontrolled PM emissions of the casthouse, prior to any capture or control, can also be calculated with the available data using the following equation:

Factor = [Tested rate for CHBH x 100/(100 - CHBH control %) + Tested rate for ISBH x (100/(100 - ISBH control %))]

With the available data, this equation yields an uncontrolled emission factor of 2.28 pounds per ton of iron:

2.28 lb/ton = [0.12 x 100/(100 - 99.25) + 0.0068 lb/ton x 100/(100 - 99)]

If one also adds the emission factor for uncaptured emissions calculated by the commenter, the factor for uncontrolled emissions becomes 2.4 pounds per ton of iron. (2.28 + 0.12 = 2.4).

<sup>12</sup> Based on an emission factor of 0.12 lbs/ton, the annual uncaptured PM emissions from the casthouse have exceeded the applicable limit, 49.06 tons per year. For example, in its 2008 Annual Emission Report, US Steel reported annual iron production of 2,034,497 tons. Using the factor of 0.12 lbs/ton, annual uncaptured PM emissions from the casthouse in 2008, a year of low production due to economic conditions, would have been 122.07 tons, more than 70 tons greater than allowed.

expresses the results of the commenter's analysis in another form, using the resulting emission factor to calculate annual emissions.<sup>13</sup>

10. Using the Illinois EPA's approach for review of emission factors, an estimate of uncaptured PM emissions from the BOF roof monitor can also be derived in a manner similar to that for the blast furnace casthouse, using data that is currently available.<sup>14</sup> Using this data, I calculate a PM emission factor for the BOF roof monitor of 0.489 pounds per ton of steel produced.<sup>15</sup> This estimate is significantly higher than the emission factor of 0.0987 lb/ton in Condition 7.5.6(d) of the revised CAAPP permit.

Response: This comment does not demonstrate that an emission factor of 0.0987 lbs/ton would understate emissions or that actual emissions exceed 0.0987 lbs/ton. The analysis conducted by this commenter again shows the importance of the value that is used for the efficiency of the control device when deriving an emission factor for uncaptured emissions. It also highlights another issue that is posed for quantitative determinations of the uncaptured PM emissions from the BOF roof monitor. This is the fact that there are three process steps, charging, refining and tapping, that contribute to the uncaptured emissions from the BOF furnaces that are emitted from the roof monitor. Different capture efficiencies apply to these steps. As a BOF furnace is covered and directly exhausts to the ESP during refining, the capture efficiency during this phase, which also has the greatest mass of PM emissions, is commonly assumed to be in excess of 99 percent. On the other hand, the uncontrolled PM emissions of tapping and charging are likely less than 10 percent of the PM emissions from refining but a minimum capture efficiency of only 95 percent is provided for the charging and tapping phases from compliance with the NESHAP. Accordingly, the derivation of the uncaptured emissions from the BOF roof monitor is more difficult than for the casthouse. This is particularly true as measurements for SO<sub>2</sub> or other pollutants from the BOF also cannot be used to confirm capture as each process almost certainly generates different amounts of other pollutants.

11. My analysis for the BOF roof monitor, which yields an emission factor of 0.489 lb/ton, also suggests that the emission factor in the permit may

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<sup>13</sup> Incidentally, if the emission limits in the permit were approached in the manner used by this commenter, emission rates could exceed the factor limit in the permit. For example, uncaptured emissions from the casthouse in 2008 could have been as high as 0.048 lbs/tons of iron, rather than only 0.031 lbs/ton, and the source would still have complied with the applicable annual limit of 49.06 tons/year.

$$49.06 \text{ tons PM/yr} \times 2000 \text{ lbs/ton} \div 2,034,497 \text{ tons/yr} = 0.048 \text{ lbs PM/ton}$$

<sup>14</sup> Based on data from recent testing presented in the Statement of Basis, PM emissions from the BOF ESP stack are 0.053 lb/ton. Statement of Basis at 98. The CAAPP permit application indicates that the control efficiency of the ESP is 99.43 percent. CAAPP permit application, Exhibit 220-5. The overall efficiency of the capture system for the BOF furnaces is assumed to be 95 percent, based on the Statement of Basis, which states that "the requirements of the NESHAP for the capture systems on BOF furnaces are commonly considered to provide a minimum of 95% capture of the emissions from the furnaces." Statement of Basis, Footnote 118.

<sup>15</sup> The emission factor for uncaptured emissions from the BOF roof monitor can be calculated using the following equation:

$$\text{Factor} = [\text{Tested rate for BOF ESP} \times 100 / (100 - \text{ESP control \%})] \times [(100 - \text{capture \%}) / \text{capture \%}]$$

With the available data, this equation yields an factor of 0.489 lb of per ton of steel:

$$0.489 = [0.053 \times 100 / (100 - 99.43)] \times [(100 - 95) / 95]$$

greatly underestimate actual PM emissions.<sup>16</sup> This further suggests that this factor is not representative of actual emissions. The Illinois EPA should remedy this problem by reviewing and updating the emission factor for PM emissions from the BOF roof monitor prior to issuance of a revised CAAPP permit.

**Response: This comment does not provide further insight on the emission factor for PM emissions from the BOF roof monitor. Like the similar comment concerning uncaptured emissions from the casthouse, it merely expresses the results of the commenter's analysis in another form, i.e., in terms of annual emissions.**

12. In addition to the two examples above regarding uncaptured PM emissions from the blast furnaces and BOF furnaces, the planned revised CAAPP permit contains other unsupported emission factors that potentially may underestimate actual emissions. For example, other emission factors in Conditions 7.4.6 and 7.5.6 continue to lack supporting documentation in the permit record. The discussion of these emission factors in the Statement of Basis focuses primarily on the process for reviewing and updating the emission factors after the issuance of the revised CAAPP permit rather than providing support for the existing factors.

**Response: As observed by this comment and as already explained in response to other comments, the revised CAAPP permit requires US Steel to provide support during the term of the permit for the emission factors that it uses to determine actual emissions for purposes of verifying compliance with permit limits. The revised CAAPP permit also does not require support for the specific "factors" in the CAAPP permit as those factors are considered emission limits that were established in construction permits.**

13. Condition 7.1.6 includes several unsupported emission factors to determine compliance with permit limits. Of the eight emission factors included in Condition 7.1.6, only one is specifically discussed in the Statement of Basis: "[T]he PM emissions from certain material handling operations, such as the BOF Hopper (baghouse) would be negligible. The PM emission factor and emission limit for this operation, which were established in a PSD permit (Construction Permit No. 95010001), were developed using Section 11.2.3-3 of AP-42 ..." Statement of Basis at 67. The source of the remaining seven emission factors is unclear and supporting documentation is not provided in the permit record.

**Response: As already explained, the revised CAAPP permit requires US Steel to provide support during the term of the permit for the emission factors that it uses to determine actual emissions for purposes of verifying compliance with permit limits.**

14. Condition 7.6.6 includes several unsupported emission factors to determine compliance with permit limits. The Statement of Basis states, "Testing specifically for the purpose of verifying emission factors is not warranted given the small amounts of emissions." Statement of Basis

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<sup>16</sup> Based on an emission factor of 0.489 lbs/ton, the annual PM emissions from the BOF roof monitor have exceeded the applicable limit, 176.7 tons per year. For example, in its 2009 Annual Emission Report, US Steel reported annual steel production of 929,601 tons. Using the factor of 0.489 lbs/ton, annual uncaptured emissions of the roof monitor in 2009, a year of very low production due to economic conditions, would have been 227.3 tons, almost 50 tons greater than allowed.

at 105. Although Illinois EPA does not believe that testing is warranted to verify emission factors, the emission factors must be verified in some way prior to the issuance of the permit.

**Response: As already explained, the approach taken to emission factors in the revised CAAPP permit did not require support for the specific factors in the permit, which in are limits, to be provided before the permit could be issued. Whether emission testing is warranted can be considered by the Illinois EPA after it has reviewed the support and documentation for actual emission factors that US Steel assembles.**

15. Without supporting documentation, it is unclear whether emission factors for emission units throughout the facility, particularly for uncaptured emissions, appropriately estimate emissions. The Illinois EPA must provide supporting documentation for all emission factors used to assure compliance with emission limits before issuance of a revised CAAPP permit. If reliable documentation cannot be provided, any unsupported emission factors should be removed from the planned revised CAAPP permit and replaced with adequate Periodic Monitoring to assure compliance with the applicable limits.

**Response: The changes to the CAAPP permit recommended by this comment would improperly remove applicable requirements from the revised CAAPP permit, not emission factors. Moreover, this comment does not show that the approach taken in the revised CAAPP permit to Periodic Monitoring for permit limits is not appropriate. This comment also does not suggest any alternatives to this approach.**

16. In its Order, USEPA presented the Illinois EPA with two options to address unsupported emission factors in the permit. Illinois EPA either had to provide supporting documentation and justification for its emission factors in the permit record or "determine and adequately support another mechanism to assure compliance with the applicable emission limits..." USEPA Order at 14. While the planned revised CAAPP permit would make some changes to the permit with respect to emission factors, the permit would continue to rely on unsupported emission factors to assure compliance with emission limits for at least a portion, if not all, of the permit term.

**Response: As already explained, the revised CAAPP permit would not rely on unsupported emission factors. It would require that compliance with permit limits be determined using emission factors for actual emissions for which there is support.**

17. The Statement of Basis explains that the several emission factors in the permit, including some emission factors from Construction Permit 95010001, will eventually be reviewed and updated as necessary to assure that the emission factors do not underestimate actual emissions. While I generally support the review and revision of emission factors, this process does not excuse the use of unsupported emission factors to assure compliance with emission limits, nor does it appropriately respond to USEPA's directive in the Order.

Although the permit would include conditions that require the review of emission factors, these reviews are required - if at all - only infrequently, such as once during the permit's five-year term. This is due to the fact that, where the permit requires the review of emission

factors, review is triggered primarily by emission testing requirements in the permit. For instance, per Condition 7.4.9(i)(i), the emission factors for uncaptured emissions from the blast furnaces would be reviewed after emissions testing is conducted for the Casthouse and Iron Spout Baghouses. Condition 7.4.7(a)(i) specifies a testing frequency for these baghouse of once every five years. Therefore, review of the emission factors for uncaptured emissions from the blast furnaces may not occur until five years after the issuance of the permit, when the permit expires.<sup>17</sup> Until then, unsupported emission factors will be used to assure compliance with the applicable permit limits.

**Response:** The issued revised CAAPP permit would not allow US Steel to use unsupported emission factors to determine compliance with permit limits. In response to comments, as already discussed, the issued revised CAAPP permit requires that the source prepare its initial files for these emission factors, with supporting documentation for these factors, so that this material would support the first determination of actual annual emissions under the revised permit. The permit also requires US Steel to submit a copy of these records and copies of any changes to these records to the Illinois EPA. Finally, the permit requires that US Steel review these emission factors and update them as necessary to assure that they do not understate emissions. While emission testing is one event that must trigger review of emission factors, the permit would not excuse US Steel from updating an emission factors if other information becomes available that suggests that the current emission factor understates actual emissions. These measures are an appropriate response to the Order as they constitute a mechanism to address compliance with applicable permit limits, including confirmation of the appropriateness of the emission factors that are actually used to determine emission with emissions testing.

Moreover, as related to the casthouse, the Illinois EPA does not have evidence to suggest that the factor limits for uncaptured emissions from the casthouse, 0.031 and 0.0155 lbs/ton for PM and PM<sub>10</sub> respectively, are currently being exceeded. Based on emission factors in USEPA's *Compilation of Air Pollutant Emission Factors*, AP-42, using the minimum 95 percent capture from compliance with the Iron and Steel NESHAP, the emission rates from casthouse would be 0.03 and 0.0153 lbs/ton for PM and PM<sub>10</sub> respectively.<sup>18</sup> Based on the level of opacity routinely observed from the casthouse, it is probable that the capture efficiency at the casthouse is greater than the minimum value of 95 percent.

18. The use of unsupported emission factors to determine compliance with emission limits for any period during the permit term is unacceptable. If the review and revision of emission factors is based, in part, on emissions testing, it is unclear why at least some of the emission

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<sup>17</sup> For the BOF roof monitor, the emission factors will be reviewed after emission testing is conducted for the BOF ESP. Condition 7.5.7(a)(i) specifies a testing frequency for the BOF ESP of every 30 months. Therefore, review of these factors is not likely to occur until over two years after the issuance of the revised CAAPP permit.

<sup>18</sup> For the casthouse, the emission factor for uncaptured PM emissions, in the absence of control in USEPA's *Compilation of Air Pollutant Emission Factors*, is 0.6 lbs/ton. With a minimum of 95 percent capture, this yields a controlled emission rate of 0.03 lbs/ton.  $(0.6 \times (100 - 95)/100) = 0.03$

The information in the *Compilation of Air Pollutant Emission Factors* would also indicate that 51 percent of the PM emissions are PM<sub>10</sub>. This yields a controlled emission rate of 0.0153 lbs/ton.  $(0.03 \times 0.51 = 0.0153)$

factors cannot be reviewed and revised prior to the issuance of the permit using recent test data, such as the test results presented in the Statement of Basis. Where the emissions testing for such a review has not yet been conducted, the revised permit should require testing and subsequent review and revision of emission factors as soon as possible, such as within three months of the issuance of the revised permit.

**Response:** This comment again reflects a flawed understanding of the nature of the emission factors in the permit and a flawed understanding of the role of the CAAPP permit. As the CAAPP permit would be the vehicle that requires US Steel to review and document the emission factors that it uses to determine actual emissions, these actions can and will only be required of US Steel once the revised CAAPP permit is issued and takes effect. Then, the annual permit limits from Construction Permit 95010001, which are considered to be of the greatest significance, apply on a calendar year. It is reasonable that the preparation of the initial records for actual emission factors required by the permit to be coordinated with the first demonstration of compliance with those limits that occurs under the revised CAAPP permit, e.g., by January 20, 2012.<sup>19</sup> Finally, an "informed" and "intelligent" approach should be taken to any emission testing that is requested by the Illinois EPA to further support or confirm the adequacy of the actual emission factors used by US Steel.<sup>20</sup> This further dictates that decisions about the need for further testing, at least as required to be conducted by US Steel at the request of the Illinois EPA, should not be made until after the initial records are prepared by US Steel and submitted to and reviewed by the Illinois EPA.<sup>21</sup>

19. Several material handling operations, as addressed in Section 7.1 of the revised CAAPP permit, are controlled by baghouses. Testing would only be required for some of these baghouses. In particular, Condition 7.1.7(b) requires testing for opacity and PM/PM<sub>10</sub> emissions for "... either the trackhopper baghouse, bin floor baghouse, or baghouse #1 as will be specified by the Illinois EPA within 30 days of receipt of the test protocol." This would not clearly identify the units subject to testing. The revised permit should specify which units are to be tested. Also, the Illinois EPA should explain why testing is required for only one of these three baghouses and how it would serve as Periodic Monitoring for all three baghouses.

**Response:** The revised CAAPP permit appropriately addresses emissions testing for the Trackhopper Baghouse, Bin Floor Baghouse, and Baghouse #1. These baghouses all serve material handling operations for the steelmaking operations. As the operations are similar, i.e., they are mechanical conveyor systems handling the same materials, their operation

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<sup>19</sup> The revised CAAPP permit does not preclude "retroactive" use of a newly established emission factor if it is determined that it more accurately reflects actual emissions as compared to a prior factor misrepresented actual emissions, either to understate or overstate emissions. Among other reasons for this, is that it would have been contrary to the principle of Credible Evidence.

<sup>20</sup> In particular, as related to emission factors for uncaptured emissions, the need for an intelligent, reasoned and well-thought approach to emission testing is demonstrated by the issues this commenter identified in comments concerning the determination for uncaptured emissions from the casthouse and the BOF roof monitor.

<sup>21</sup> At the same time, the revised CAAPP permit would not prevent US Steel from having emission testing conducted earlier if it is determined that such testing is warranted to confirm the adequacy of the actual emission factors that it is using.

and emission rates will be similar. Accordingly, emission testing for a single unit would provide representative data for all three units provided that all three units continue to be operated and maintained in a similar fashion. Specifying the unit to be tested in the CAAPP permit, as suggested by this comment, would be contrary to this objective. It could act to encourage different and better operating and maintenance practices for the unit that would be tested, as compared to the other two units. On the other hand, the approach taken in the revised CAAPP permit, i.e., designation by the Illinois EPA of the unit to be tested shortly before testing, avoids any such incentive. Any of the units may ultimately be the one selected for testing so that each of the units must be appropriately operated and maintained in case it is the one selected for testing.<sup>22</sup>

20. 35 IAC 212.443(g) (Condition 7.2.3-7(a)(i)) limits PM emissions of the combustion stacks of the two coke oven batteries to 0.05 gr/dscf. Condition 7.2.3-7(c) limits the non-sulfate PM emissions of the combustion stack for Battery B to 0.03 gr/dscf. The Periodic Monitoring for these limits includes requirements of testing of PM emissions (filterable and filterable non-sulfate) within 24 months of the effective date of the permit (Condition 7.2.7-3(b)(i)). The timing of subsequent testing would then depend on the results of the previous test. The Statement of Basis explains, "If there is not an ample compliance margin, emission testing would be required to be repeated in 30 months, i.e., the frequency of the NESHAP, 40 CFR 63 Subpart FFFFFF, for units of 'high interest.' If there is an ample compliance margin, emission testing would be required to be repeated in 60 months, the frequency of 40 CFR 63 Subpart FFFFFF, for units of 'less interest.'" Statement of Basis at 77. This justification is unclear for several reasons. First, 40 CFR 63 Subpart FFFFFF does not refer to "high" or "low" interest units; testing frequency is based on whether or not the emission unit is equipped with a baghouse, or a control device other than a baghouse. Second, the combustion stacks at this facility do not have control equipment for PM emissions. Furthermore, 40 CFR 63 Subpart FFFFFF does not apply to coke oven batteries.<sup>23</sup> Consequently, Illinois EPA's justification of Periodic Monitoring for the combustion stacks with testing frequencies from 40 CFR 63 Subpart FFFFFF is inappropriate.

**Response:** The approach to the frequency of emission testing for the combustion stacks in the revised CAAPP permit is appropriate. These comments do not justify changes to the emissions testing required as part of the Periodic Monitoring for the combustion stacks. As observed by this comment, the combustion stacks are not served by any add-on control equipment and compliance with PM limits is not dependent upon the performance of such equipment. The extent of variation in emissions should be expected to be similar to the variation for emission units that are controlled by baghouses, i.e., control equipment that is commonly considered highly reliable. As such, while not applicable to the combustion stacks, 40 CFR 63 Subpart FFFFFF provides direction as to an appropriate timing for emission testing of the combustion stacks, indicating that testing once per permit term or every 60 months should be considered adequate. The approach in the revised CAAPP permit is more

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<sup>22</sup> Even if identical practices were maintained for all three units, identifying the unit to be tested in the permit could be perceived as a possible source of bias in the emission testing.

<sup>23</sup> The NESHAP rules for combustion stacks at coke oven batteries are found in 40 CFR 63 Subpart CCCCC.

stringent as it would require emission testing to be repeated in 30 months, i.e., twice per permit term, if the initial emission testing does not show a meaningful margin of compliance with applicable limits.<sup>24</sup> Other than to observe that 40 CFR 63 Subpart FFFFF is not applicable to the combustion stacks, this comment does not include any factual information showing that the approach taken in the revised CAAPP permit to the frequency of emission testing for these units is not appropriate.

21. More frequent emission testing should be required for the combustion stacks of the coke oven batteries because the most recent emission testing, which was conducted on Battery B, did not indicate a significant margin of compliance with 35 IAC 212.443(g) (Condition 7.2.3-7(a)(i)).<sup>25</sup> During this emission testing, the measured PM emissions from the combustion stack of Battery B were 0.0466 gr/scf, compared to the limit of 0.05 gr/scf. Statement of Basis at 76. This is a compliance margin of only 7 percent. Consequently, the revised CAAPP permit should require annual testing of the combustion stacks to assure compliance with PM limits.

Response: As discussed above, the approach to the frequency of PM emission testing for the combustion stacks of the coke oven batteries in the revised CAAPP permit is appropriate. As observed by this comment, although the most recent emission testing for the combustion stack of Battery B showed compliance with the limit for emissions, it did not show a significant margin of compliance. It is for this reason that the revised CAAPP permit requires initial emission testing of the combustion stacks to be conducted soon after this condition in the permit takes effect, i.e., within 24 months.<sup>26</sup> Thereafter, the timing of emission testing would be based on the compliance margin. This approach to the timing of emission testing is present in various federal emission standards.<sup>27</sup> A secondary benefit of this approach is that it provides an incentive for a source to operate with a significant compliance margin from an applicable standard or limit. This incentive would not be present if the source had to test on a fixed schedule independent of the results of emission testing. This comment does not show that a "results-based" approach to the timing of emission testing is not appropriate. Indeed, the comment itself cites the compliance margin shown in a previous test as a basis for requiring emission testing on an annual basis. However,

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<sup>24</sup> US Steel indicates that Title V permits for its plants in Indiana and Pennsylvania require testing of combustion stacks on the coke oven batteries every 60 months.

<sup>25</sup> The Statement of Basis noted that for emissions of non-sulfate PM, the most recent emission testing of the combustion stack of Battery B showed a compliance margin of over 50 percent. However, it did not address the compliance margin for the PM standard in 35 IAC 212.443(g).

<sup>26</sup> The revised CAAPP permit issued by the Illinois EPA requires that initial testing for PM emissions pursuant to the permit be conducted within 24 months. If this testing does not show a significant compliance margin, this timing should ensure that the results of two tests will be available at the time that the CAAPP permit is being renewed. This is because the next tests will have to be conducted no later than 54 months after the permit takes effect.

<sup>27</sup> For example, in the NESHAP for Portland Cement Manufacturing Plants, 40 CFR 63 Subpart LL, as related to observations for visible emissions from material handling operations, monthly observations for visible emissions are initially required for a subject unit. If no visible emissions are seen in six consecutive monthly observations, the frequency of observations goes from monthly to semi-annually. If no visible emissions are observed during a semi-annual observation, the frequency of observation goes to annual. If visible emissions are observed during a semi-annual or annual observation, monthly observations must be resumed. (See 40 CFR 63.1350(f)(1).)

the comment does not contemplate that future emission testing may show a significant compliance margin.<sup>28</sup>

In response to this comment, separate from the overall approach to the timing of emission testing, the Illinois EPA has further considered the level selected as a significant compliance margin with this approach. In the planned revised CAAPP permit, a compliance margin of 10 percent would have been considered significant. However, as this compliance margin would govern the timing of emission testing, determining whether the next emission tests would be conducted within 30 or 60 months, a significant compliance margin should be larger than 10 percent.<sup>29</sup> In the context of emission testing, an appropriate value for a significant compliance margin is 20 percent.<sup>30</sup>

22. As related to PM emissions from the combustion stacks, the Statement of Basis also states that "as the NESHAP requires opacity monitoring, opacity data would be collected on a short-term basis (6-minute averages and hourly-averages) that would also address this standard for PM emissions." Statement of Basis at 76. It is not clear from the permit record how opacity measurements would be used to assure compliance with the PM limit and whether a correlation between opacity and PM emissions from the combustion stacks has been established. Without further support or explanation, this does not constitute adequate Periodic Monitoring.

**Response:** For the purpose of the combustion stacks at this source, the opacity of emissions from each stack, as measured by the continuous monitoring systems on the stack, would be an indicator of normal combustion in the flues of the coke oven battery. That is, opacity would be used as an indicator of operation in a manner that is consistent with normal operation and the operating conditions that are present during emission testing. The values of opacity with which actual opacity would be compared would be prior opacity levels, on an hourly average and maximum six-minute average.<sup>31</sup> The principle measure of opacity that would be used to address actual operation of the batteries would be opacity on

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<sup>28</sup> It is reasonable to consider that improvements may have occurred in the operation of the coke oven batteries since the last emission test have acted to lower PM emissions of the combustion stacks. For example, US Steel now has the capability to supplement COG with natural gas to stabilize the heat content of COG when coal is wet.

<sup>29</sup> For example, as related to the timing of opacity observations for the blast furnace casthouse, a compliance margin of 10 percent would be considered significant by the revised CAAPP permit. That is, if a compliance margin of at least 10 percent is shown, opacity observations would be required on a weekly basis rather than on a "daily basis," i.e., for five out of every seven operating days. In the case of the casthouse, this compliance margin only determines whether the next opacity observations will be conducted in one or two days or in a week, rather than 30 or 60 months later.

<sup>30</sup> The Illinois EPA has also further considered how the compliance margin should be addressed given there are two coke oven batteries, one of which has two applicable limits, one for PM emissions and one for non-sulfate PM emissions. The issued permit provides that a compliance margin of at least 20 percent must be shown by both batteries and all limits if the next emission tests are to be required in 60 months rather than 30 months. Given the identical nature of the two batteries, a margin of less than 20 percent by either battery for an applicable limit is indicative of potential variability in emissions that warrants testing next be conducted in 30 months. On the other hand, if a compliance margin of at least 20 percent is shown for both batteries and all limits, it provides further confirmation that a substantial margin of compliance is present.

<sup>31</sup> The revised CAAPP permit issued by the Illinois EPA requires submittal of data for the actual opacity measured at the combustion stacks, as well as information for any excess opacity. (See Condition 7.2.10(a)(ii).)

an hourly average basis. This is because the PM standard applies on an hourly basis. The 6-minute average opacity would also be considered as it might identify variation in the operation of the batteries that would not be apparent on an hourly basis.<sup>32</sup>

The existence of a relationship or positive correlation between the opacity of the emissions of an emission unit and the unit's PM emissions is commonly recognized.<sup>33</sup> Opacity is routinely relied upon in day-to-day practice as a surrogate for emissions of PM. The absence of a precise numerical relationship between opacity and PM emissions<sup>34</sup> does not make reliance on this relationship inappropriate. Rather, the basic nature of this relationship is another consideration, along with the demonstrated margin of compliance during historic emission testing, when deciding upon how to address the frequency and timing of emission testing.

23. For the COG flare at the coke by-product recovery plant, the planned revised permit would not require observations of opacity as necessary to assure compliance with 35 IAC 212.123 (Condition 7.3.3(f)). This standard limits the opacity of emissions from this flare to no more than 30 percent. According to the Statement of Basis, "Periodic Monitoring is not needed to address this standard as the CAAPP permit would prohibit visible emissions from the COG flare." Statement of Basis at 81. This reasoning is unsound. Just because the revised permit would prohibit visible emissions, it would not ensure that there will not be visible emissions from this flare. Furthermore, in the event that there are visible emissions from this flare, there is no guarantee that 35 IAC 212.123 will be met without any observations for opacity. The permit should require routine opacity observations, such as daily observations, to assure compliance with 35 IAC 212.123.

**Response:** In response to this comment, the Illinois EPA has further considered the approach to Periodic Monitoring for 35 IAC 212.123 for the COG flare. The revised CAAPP permit issued by the Illinois EPA would require monthly observations for this flare for the presence of visible emissions, immediately followed by opacity observations if visible emissions are present. This approach is a direct response to 35 IAC

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<sup>32</sup> The basis of comparison would not be the level of opacity allowed by either 35 IAC 212.123 (30 percent, six-minute average) or 40 CFR 63.7296 (15 percent, daily average, as applicable for operation with normal coking cycles).

<sup>33</sup> PM emissions have a positive correlation with opacity. An increase in the opacity of emissions from an emission unit is generally associated with higher PM emissions from the unit. For combustion stacks on coke oven batteries, this relationship is recognized by USEPA as the NESHAP for coke batteries, 40 CFR 63 Subpart CCCC, addresses the emissions of HAPs, especially particulate HAP, from combustion stacks with a standard that limits the opacity of emissions.

<sup>34</sup> The value of opacity that correlates to a particular level of PM emissions and the mathematical relationship between opacity and PM emissions is specific to a type of emission unit or, for many types of emission units, to individual emission units. This is because, among other things, emission units have different exhaust flow rates and stack configurations and different concentrations of particulate in their exhaust. The particulate emissions of different units also have different size distributions and other properties that determine the extent to which it blocks or obscures the transmission of light. This precludes a mathematical relationship between opacity and PM emissions that applies across disparate emission units. However, it does not mean that a reasonable correlation or relationship cannot exist between opacity and PM emissions for a particular emission unit. This is particularly true as applied to the combustion stacks of the coke oven batteries as control equipment is not present, which might otherwise affect the particle size distribution of the PM emissions.

212.123, the applicable requirement that must be addressed for opacity from the COG flare. It is also responsive to this comment since opacity observations would be required if visible emissions are seen when the observations for visible emissions are conducted. As a consequence of this approach, however, the issued permit would not prohibit visible emissions from the COG flare.<sup>35</sup>

24. Condition 7.3.6(d)(i) would prohibit any visible emissions from the COG flare. Condition 7.3.8(c) would require observations for visible emissions from the flare on an annual basis. This frequency for observations is not "... sufficient to yield reliable data from the relevant time period that is representative ...". The Statement of Basis implies that because the permit would prohibit visible emissions from the COG flare, they will not occur. This is an unacceptable and unsupported conclusion. For example, despite proper operation and maintenance of the flare, factors such as high wind speed could negatively affect the flare's combustion efficiency, increasing the potential for visible emissions from the flare. Accordingly, annual observations for visible emissions would not be adequate. The revised CAAPP permit should require observations for visible emissions sufficient to assure compliance with the limit. For example, as requirements for opacity observations associated with 35 IAC 212.123 are included in the revised CAAPP permit, these observations could also be used to verify the absence of visible emissions. Alternatively, because US Steel is required to verify the presence of a flame at the tip of the COG flare once per shift, pursuant to Condition 7.3.9(e)(i), observations for visible emissions could easily be made at the same time.

**Response:** As already discussed, the revised CAAPP permit issued by the Illinois EPA would not prohibit visible emissions from the COG flare. It would require observations on a monthly basis for the presence of visible emissions, followed by observations for opacity if visible emissions are present. This reflects further consideration of the circumstances of the COG flare in response to this comment. As observed by this comment, high wind speed could affect the combustion efficiency of the flare potentially leading to visible emissions. Monthly observations for visible emissions from the flares, with follow up opacity observations if visible emissions are present, would generally address the potential effect of wind speed on the occurrence of visible emissions and opacity from the flares. This is because multiple observations would occur each year under a variety of wind speed conditions.

To further assure that observations are made for the COG flare under high wind speed conditions, the revised CAAPP permit issued by the Illinois EPA requires that the monthly observations of opacity be coordinated with weather conditions. On an annual basis, at least two of the observations of the COG flare that are made each year must be made during conditions of elevated wind speed.<sup>36</sup>

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<sup>35</sup> Visible emissions have never been prohibited from the COG flare, with only 35 IAC 212.123 constraining the opacity of the emissions from the flare. As a result, past inspections conducted for this flare may not have involved observations for the presence of visible emissions from the flare, instead being directed only to proper operation of the flare and the opacity of emissions. As such, the past inspections for this flare may not provide a reliable basis upon which to establish a new requirement in the revised CAAPP permit that would prohibit any visible emissions from this flare.

<sup>36</sup> For the purpose of observations of visible emissions and opacity from flares, the revised CAAPP permit considers elevated wind speed to be at least 16 miles per hour.

25. For the thermal oxidizer in the COG Desulfurization System, Condition 7.3.7(e)(i) limits hourly and annual emissions of PM<sub>10</sub> and SO<sub>2</sub>.<sup>37</sup> As related to Periodic Monitoring, the Statement of Basis explains, "To specifically address the permit limits, relevant records would be required for the COG throughput of the COG Desulfurization System, the emission factors used by the Permittee to calculate emissions from the thermal oxidizer, and actual emissions for comparison to applicable limits." Statement of Basis at 82. However, the CAAPP permit would only require emissions testing upon Illinois EPA request. Condition 7.3.8(d). Because emission factors are used to determine compliance, testing should be required to verify that the emission factors are representative of operation over the term of the permit. The revised CAAPP permit should require PM<sub>10</sub> and SO<sub>2</sub> testing at least twice during the term of the permit.

**Response:** As discussed in the Statement of Basis, emission testing was recently conducted for the thermal oxidizer that is part of the COG Desulfurization System. This testing showed compliance with applicable permit limits by a significant margin of compliance.<sup>38</sup> The results support use of operational monitoring and annual opacity observations as Periodic Monitoring for the thermal oxidizer without a need for further "mandatory" emission testing made during the term of the permit. The COG Desulfurization System is a chemical process unit that removes hydrogen sulfide (H<sub>2</sub>S) from COG, recovering the H<sub>2</sub>S as sulfur. The system is equipped with extensive operational instrumentation as needed for the safe and effective operation of the system, including instrumentation for the H<sub>2</sub>S and SO<sub>2</sub> content of the tail gas that goes to the thermal oxidizer.

To address the SO<sub>2</sub> emissions of the thermal oxidizer, the revised CAAPP permit issued by the Illinois EPA provides that records be kept for the sulfur content of the tail gas as measured by this operational instrumentation (See Condition 7.3.10(e)(vi)(C)). As related to PM emissions, the CAAPP permit sets a minimum combustion chamber temperature, with accompanying operational monitoring, to address the efficiency of the combustion of tail gas by the thermal oxidizer. In conjunction with proper operation of the Desulfurization System for removal of H<sub>2</sub>S from the coke oven gas, which is addressed by the continuous monitoring for the H<sub>2</sub>S content of desulfurized COG, and other this will address consistent operation of this system as also related to its PM emissions. To further confirm proper operation of this system as related to PM emissions, the revised CAAPP permit also requires annual observations for visible emissions from the thermal oxidizer, immediately followed by opacity observations if visible emissions are observed. Finally, as observed by this comment, the permit provides that emission testing must be performed upon request by the Illinois EPA. This would facilitate testing in the unlikely event that circumstances arise during the term of the permit that Illinois EPA finds warrant emission testing of the COG Desulfurization System.

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This is substantially higher than the average wind speed in the St. Louis area, 9.7 miles per hour.

<sup>37</sup> Condition 7.3.7(e)(i) limits PM<sub>10</sub> emissions of the thermal oxidizer in the COG Desulfurization System to 5.6 lb/hr and 24.6 ton/year. SO<sub>2</sub> emissions are limited to 67.3 lb/hr and 294.7 ton/year.

<sup>38</sup> This emission testing, which was conducted in December 2010, shows compliance margins of over 25 and 45 percent, respectively, for the applicable short-term limits in the permit for PM and SO<sub>2</sub> emissions.

This comment does not justify mandatory testing of the thermal oxidizer twice during the term of the permit. By itself, the fact that emission factors would be used to address permit limits is not sufficient basis to require such testing. This is because the relevant emission factors would be developed from and supported by recent emission testing of this unit and this testing showed a substantial margin of compliance with the applicable short-term emission limits. In addition, as related to SO<sub>2</sub> emissions, the comment does not consider the use of operational instrumentation, as is normally present on sulfur removal and recovery systems to facilitate proper operation. For this system, this instrumentation collects data for the sulfur content of the tail gas stream directed to the thermal oxidizer. As related to PM emissions, the comment does not identify a possible source or cause of variability in the particulate content of the tail gas, much less a cause of variability that would significantly affect PM emissions such that the results of recent emission testing should not be considered representative of PM emission rates during the term of the permit.

26. 35 IAC 212.446(a)(1) (Condition 7.4.3(b)(i)) limits the opacity of uncaptured PM from any opening in the blast furnace casthouse to 20 percent. Condition 7.4.7(b)(i) would require opacity observations on at least five out of seven operating days or weekly, depending on the previous opacity observations. According to the Statement of Basis, "Weekly observations would be required if the prior observations show a significant margin of compliance, i.e., opacity is less than 18 percent." Statement of Basis at 86. The justification for these two different frequencies is unclear. Illinois EPA fails to adequately explain why the arbitrary designation of 18 percent as a significant margin of compliance justifies less frequent monitoring. The Statement of Basis states, "This approach to the timing of opacity observations is appropriate as a violation of 35 IAC 212.445(a) would be expected to result from a gradual deterioration of the capture system and/or pollution prevention measures for the casthouse." Statement of Basis at 86-87. However, past opacity exceedances for uncaptured emissions from the casthouse identified in a Notice of Violation issued to US Steel by USEPA on September 30, 2009 do not support the conclusion that opacity exceedances are the result of gradual deterioration of the system. For example, US Steel's Semi-Annual Compliance Report for 40 CFR 63 Subpart FFFFF, dated July 30, 2008, indicates two incidences of excess casthouse emissions. One was due to an unknown cause and the other was due to "a missed stop on 'B' Furnace and mud falling into the trough." Neither of these examples supports the conclusion that previous opacity observations under 18 percent guarantee that opacity will remain below 20 percent for the next week. The revised permit should require daily opacity observations to assure compliance with this standard.

**Response:** In response to this comment, the revised CAAPP permit issued by the Illinois EPA enhances the recordkeeping that is required for operation of the blast furnace casthouse. As observed by this comment, violations of 35 IAC 212.446(a)(1) can result from "upsets," i.e., sudden, transitory events that are not related to deterioration of the capture and control system on the casthouse.<sup>39</sup> As implied by this

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<sup>39</sup> In particular, the "missed stop on 'B' Furnace" is a process upset that occurred during the end of the tapping cycle on a blast furnace. The refractory clay or mud used to seal the taphole gave way with some of this material falling into trough located

comment, these types of events may be more relevant now for the emissions from the casthouse than the routine operation of the capture and control system, whose ongoing performance is confirmed by regular opacity observations. However, upsets are most appropriately addressed directly, by requiring relevant records for operation of the casthouse that would encompass these types of events. This should be more effective in identifying upsets than attempting to indirectly identify these events with more frequent opacity observations. Direct recordkeeping would potentially address all such events whereas opacity observations would only identify such incidents that result in excess opacity and coincide with the periods when opacity observations are being conducted for the casthouse. Moreover, identification of a cause for excess emissions is commonly considered to be a critical step in addressing a violation.<sup>40</sup> As required records would include explanations for upsets and describe their causes, such records would be more useful than additional opacity observations.<sup>41</sup>

This comment does not support the premise that "daily" opacity observations, i.e., observations on five out of seven operating days, should be required as they are necessary to identify any upsets at the casthouse. As shown by the compliance report referenced by this comment, weekly observation at the casthouse are able to identify upsets that occur at the casthouse. This comment also does not show that daily opacity observations would be more effective in addressing upsets that do occur at the casthouse as compared to enhancements to the required recordkeeping for the casthouse.

27. Conditions 7.4.5-4(c) and (d)(i)(A) prohibit visible emissions from the two BFG flares except for periods not to exceed a total of five minutes during any two consecutive hours. However, Condition 7.4.7(d) would only require observations for visible emission from the flares to be conducted on an annual basis. The Statement of Basis does not adequately explain how annual observations would be "sufficient to yield reliable data from the relevant time period that is representative of the source's compliance" with this requirement. The Statement of Basis states that "this requirement can generally be readily met by properly operated flares burning BFG." Statement of Basis, Note 101. This is because BFG is primarily composed of carbon monoxide and hydrogen, is generated at a steady rate, and is readily combusted, visible emissions will not be a problem. I have several concerns with these assumptions. First, the permit record does not provide evidence that the composition of BFG is constant over time. Second, emissions from the BFG flare are also dependent on the combustion efficiency of the flare. High wind speed negatively affects the combustion efficiency of flares, increasing the potential for visible emissions. Consequently, the revised CAAPP permit

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below the taphole, which still contained molten iron. This generated additional particulate matter that resulted in excess opacity.

<sup>40</sup> Identification of the cause of a violation is important as it provides the basis for the technical assessment of the incident and the evaluation of actions that could be taken to prevent similar incidents in the future. Identification of the cause of a violation is also important as it provides information that a regulatory agency needs to evaluate the action that it should take in response to the incident.

<sup>41</sup> It is troubling that even though the two violations were both only six-minutes in duration and US Steel was able to identify a violation of 35 IAC 212.446(a)(1) in its semi-annual compliance report, US Steel was nonetheless unable to provide any explanation in the report for the causes of one of the violations. This suggests a deficiency in current recordkeeping practices related to operations in the casthouse.

should require more frequent observations of the flare, such as daily observations.

Response: In response to this comment, the revised CAAPP permit issued by the Illinois EPA requires monthly observations of each BFG flare for the presence of visible emissions to verify compliance with the applicable restriction on visible emissions.<sup>42</sup> These observations must be coordinated with wind speed so that the observations made each year include observations when wind speeds are elevated. This action would assure that the observations made each year for visible emissions from each flare address the potential effect of wind speed on the occurrence of visible emissions. It is not necessary for more frequent observations to be conducted to address variability in the composition of BFG. BFG is a byproduct gas generated by the operation of the blast furnaces. The composition of BFG is determined by the chemical reaction by which iron ore is converted into iron. Raw BFG is also not treated in a way that alters its composition as related to how it combusts.<sup>43</sup> In this regard, BFG is distinguishable from the waste gases that may be flared at petroleum refineries, which may vary significantly in composition and heat content.<sup>44</sup> Finally, monthly observations for visible emissions would reasonably accommodate performance of opacity observations, which must be performed by certified observers, if visible emissions are observed.<sup>45, 46</sup>

28. 35 IAC 212.458(b)(7) and (c) (Condition 7.6.3(b)(i)) limits emissions of PM<sub>10</sub> from the continuous casting operations, other than emissions of fugitive particulate, to 0.01 gr/scf if visible emissions are present. The Statement of Basis explains that "To specifically provide Periodic Monitoring for this standard, the permit would require the source to conduct opacity observations within five days of a written request from the Illinois EPA. The permit would also explicitly provide for testing for PM emissions to be conducted upon request by the Illinois EPA." Statement of Basis at 105. This does not constitute adequate Periodic Monitoring. There is no way to derive PM<sub>10</sub> emissions from opacity observations. The revised CAAPP permit should require PM<sub>10</sub> emission testing in the event that visible emissions are observed from the stacks.

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<sup>42</sup> These observations must also be accompanied by opacity observations if visible emissions are observed.

<sup>43</sup> All BFG from the blast furnaces undergoes cleaning to remove dust. The removal of dust does not change the composition of the gas as related to combustion.

<sup>44</sup> The gases that are flared at petroleum refineries are commonly the result of process upsets. They may vary in composition depending upon the unit that experiences the upset and the nature of the upset. Because certain process units at refineries operate at high pressures, the waste gases that must be flared cannot be treated prior to flaring and the flow rate of flared gases can vary greatly during an upset. The BFG flared at this source is not the result of process upsets. It consists of "purge gas," which is needed to prevent infiltration of air into the flare piping, and surplus BFG, which cannot be used productively as fuel given the normal fluctuation in the actual operation and steam demand of the source over time.

<sup>45</sup> It is expected, at least initially, that US Steel will elect to verify proper operation of BFG flare #1 by daily inspections to confirm the presence of a flame at the flare tip. These inspections would not need to be performed by individuals who are certified to make opacity observations. However, the revised CAAPP permit would also accommodate the use in the future of instrumentation to verify the presence of a flame at the flare, which would be preferable. If this were to occur, daily inspections of BFG flare #1 would no longer be needed.

<sup>46</sup> Opacity observations must also be conducted for the nearby casthouse on at least weekly basis.

Response: The CAAPP permit issued by the Illinois EPA requires testing of the continuous casting operations for emissions of PM<sub>10</sub>, as generally suggested by this comment. (See Condition 7.6.7(b)(i)(A).) Upon further consideration, it has been concluded that it is reasonable to require the PM<sub>10</sub> emissions of these operations to be confirmed with testing. Accordingly, rather than trigger such testing if visible emissions are observed, which might never occur, the issued permit directly requires such emission testing once during the term of the permit. For this purpose, testing is required to be conducted within 30 months of the effectiveness of the testing requirement. This approach to PM emission testing is more straightforward than triggering such testing if visible emissions are observed. It will also inform the evaluation of Periodic Monitoring requirements when the issued CAAPP permit is undergoing renewal.<sup>47, 48</sup>

29. For the slab reheat furnaces, 35 IAC 212.458(b)(10) and (b)(7) (Conditions 7.7.3(b) and (g)) limit PM<sub>10</sub> emissions to 38.7 ng/J (0.09 lb/mmBtu) of heat input and 22.9 mg/scm (0.01 gr/scf), respectively. Pursuant to 35 IAC 212.458(c), if visible emissions are not observed, neither limit applies. The Statement of Basis explains that opacity observations would be used to assure compliance with these limits. Statement of Basis at 107-08. But there is no way to derive PM<sub>10</sub> emissions from opacity observations. Testing of PM<sub>10</sub> emissions would not be required except upon written request from Illinois EPA. See Condition 7.7.8(b). This does not constitute adequate Periodic Monitoring. In February 2009, I commented that draft Condition 7.7.3-1, now Condition 7.7.3(b), lacked adequate Periodic Monitoring because PM<sub>10</sub> testing would only occur at the request of Illinois EPA or USEPA. In response, in the initial CAAPP permit, PM<sub>10</sub> emission testing was required for one reheat furnace to be conducted once every five years. The planned revised CAAPP permit would no longer include this requirement because, as explained in the Statement of Basis, "Regular testing for PM<sub>10</sub> emissions is not warranted based upon the most recent emission testing for reheat furnaces." Statement of Basis at 108. However, a past test result does not guarantee that PM<sub>10</sub> emissions will not exceed limits in perpetuity, even with the demonstration of a large margin of compliance. The revised CAAPP permit should require PM<sub>10</sub> emission testing in the event that visible emissions are observed from a furnace.

Response: For PM emissions of the slab furnaces, the permit appropriately relies on opacity, or more precisely the combination of observations for visible emissions and opacity, as the principle element of Periodic Monitoring. As observed by this comment, emission testing would be a secondary element of the Periodic Monitoring for PM emissions from these furnaces, as the revised permit would require emission testing only upon request by the Illinois EPA. It is appropriate that the permit rely primarily on observations of visible emissions and opacity as those observations will directly confirm good combustion and proper operation. Good combustion is the concern for an emission unit whose particulate

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<sup>47</sup> A requirement for testing of PM/PM<sub>10</sub> emission is also reasonable as 35 IAC 212.458(c) actually provides that if a stack test is performed, the applicable mass emission standard, in this case 0.01 gr/scf pursuant to 35 IAC 212.458(b)(7), is applicable notwithstanding the absence of visible emissions.

<sup>48</sup> Incidentally, the planned CAAPP permit would also have required monthly observations of the continuous casting operations for the presence of visible emissions. This requirement is also retained in the revised CAAPP permit issued by the Illinois EPA. (See Condition 7.6.8(a)(ii).)

emissions are related to combustion of gaseous fuel. While a precise rate of PM emissions cannot be mathematically derived from the opacity of emissions, such precision is not needed to utilize opacity as an element of Periodic Monitoring. As already discussed, the opacity of emissions is routinely used as means to address PM emissions. In this case, the actual measure of opacity would likely be the presence of visible emissions. The role of observations of visible emissions and opacity would be to confirm that the furnaces are operating in a manner such that the quantitative measurements of PM emissions during testing should be considered to reflect or be representative of their emissions. This function can be readily served by observations of visible emissions and opacity.

This comment does not justify mandatory testing of a reheat furnace for PM<sub>10</sub> emissions simply because visible emissions are observed from a furnace. The comment does not consider the temporal difference between determinations of visible emissions and measurements of opacity and PM emissions. Observations of visible emissions are made on an instantaneous basis, i.e., if the observer sees any visible emissions, visible emissions are considered present. Measurements of opacity are commonly made over a six minute period, as the arithmetic average of 24 distinct observations at 15 second intervals. PM emissions standards commonly apply on an hourly basis, with emissions determined as the average of three test runs, each nominally one hour in duration. Accordingly, even though visible emissions are not normally present the reheat furnaces, the mere presence of any visible emissions, and some opacity from reheat furnaces, by itself should not be considered a significant departure from the normal conditions of a furnace, as present during historic emission testing. This is especially true given the margin of compliance with applicable PM standards shown during recent emission testing.

While an emission test that shows compliance does not guarantee that emissions will not exceed an applicable limit in perpetuity, even when the particular test shows a large margin of compliance, as observed in this comment, such a test is nevertheless a strong indication of future compliance over the limited five-year term of a CAAPP permit. This is especially true in the absence of factors that would introduce significant variability into the emission rate of a unit, notably the performance of add-on control equipment. As such, as applied to PM emissions of the reheat furnaces, which are not equipped with particulate control equipment, this observation in this comment is not of any particular value as related to the Monitoring requirements for these furnaces.

Finally, as noted by this comment, the revised CAAPP permit would not mandate testing of a reheat furnace for PM<sub>10</sub> emissions during the term of the permit, as was required by the original CAAPP permit. For Reheat Furnace 4, the testing for this furnace conducted in August 2010 effectively served to fulfill this requirement. Accordingly, as related to Furnace 4, there was no longer a sufficient basis to carry this testing requirement over into the revised CAAPP permit.<sup>49</sup> Moreover, as all four reheat furnaces fire COG and natural gas and the testing of Furnace 4 showed compliance with applicable PM standards with a

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<sup>49</sup> The testing of Reheat Furnace 4 earlier in the term of the CAAPP permit is preferable to later testing during the term of the permit at the time of renewal. The earlier testing provides data that is informative of emissions during the remaining years that the permit is in effect, whereas testing at the time of renewal provides data that is informative for the processing the renewal of the permit.

substantial margin of compliance, the testing of Reheat Furnace 4 also eliminated support for a requirement for testing emissions of PM<sub>10</sub> from Furnace 1, 2 or 3 during the term of this CAAPP permit.<sup>50</sup>

30. For Power Boiler #1, Condition 7.10.7-1(b) requires CO emission testing once every five years. However, there is not a similar requirement for Boilers #11 and #12. The revised CAAPP permit should also require testing of CO emissions for Boilers #11 and #12.<sup>51</sup>

**Response:** The CAAPP permit issued by the Illinois EPA would require emissions of CO also be measured as part of the emission testing for Boilers #11 and #12, as suggested by this comment. (See Condition 7.10.7-1(a)(i).) As emission testing would be required for the PM emissions of these boilers, it is reasonable for testing for CO emissions to also be conducted.

31. For the boilers, the Periodic Monitoring for 35 IAC 216.121 would rely on work practice requirements in Condition 7.10.5-1 of the revised CAAPP permit, by requiring measurements for the concentration of CO in the effluent stream of each boiler before and after adjustments are made during annual combustion tune-ups. However, the results of these CO measurements must only be submitted to the Illinois EPA upon request (See Condition 7.10.5-1(a)(iv)). The revised CAAPP permit should require US Steel to report the CO measurements made during annual tune-ups of the boilers to the Illinois EPA. If the CO measurements are not reported, it is unclear how they can be used to assure compliance with 35 IAC 216.121.

**Response:** The CAAPP permit issued by the Illinois EPA would require that measurements of CO made during annual tune-ups to be reported to the Illinois EPA, as suggested by this comment, along with other information about these tune-ups. (See Condition 7.10.5-1(a)(iv)(B).) As the revised CAAPP permit would rely on these CO measurements as part of the Periodic Monitoring for 35 IAC 216.121 the boilers, it is reasonable for these measurements to be reported to the Illinois EPA.

32. Without opportunity for review of emission factors by the Illinois EPA or the public, the approach to emission factors in the planned revised CAAPP permit would be inappropriate because it would be vague. A CAAPP permit must be sufficiently clear and specific to ensure that its provisions can be enforced. Vague standards result from provisions that are so unspecific that they render compliance to be completed within the arbitrary discretion of the Permittee without oversight by the regulatory authorities or public involvement.

**Response:** This comment does not demonstrate that the planned approach to "emission factors" would be inappropriate because it would be "vague." The approach provides a clear, specified approach to the emission factors that US Steel would use to determine emissions for purposes of determining compliance with applicable permit limits. Enforcement actions could be initiated against US Steel if its emission determinations understate actual emissions of emission units for which limits apply, as well as if actual emissions exceed the applicable limits. US Steel would

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<sup>50</sup> While the revised CAAPP permit would no longer mandate testing of PM<sub>10</sub> emissions, the revised permit would require testing of all four reheat furnaces for NOx emissions.

<sup>51</sup> 35 IAC 216.121 (Condition 7.10.3(f)) limits CO emissions of boilers at the facility (Boilers #11 and #12 and Power Boiler #1) to no more than 200 ppm.

also be obligated to report either of such circumstances to the Illinois EPA as they would constitute deviations.

The underlying issue posed by this comment is whether the approach in the permit to the emission factors used to determine compliance with permit limits should be accompanied by provisions that facilitate supervision by the Illinois EPA and potential public involvement. The revised CAAPP permit issued by the Illinois EPA would include such provisions. However, as this comment claims the approach taken in the revised CAAPP permit would be "vague," it does not support those provisions.

33. There are a number of provisions in the planned revised CAAPP permit relating to US Steel's use of emission factors that would not only undermine the practical enforceability of the permit, but also compromise the Periodic Monitoring requirements by allowing US Steel to set the terms of its own compliance.

**Response:** This comment again does not demonstrate that the approach to emission factors in the revised CAAPP permit is inappropriate. US Steel cannot "set the terms of its own compliance" with permit limits by mere adjustments or changes to emission limits. As emission factors must not understate actual emissions, US Steel can only assure compliance with permit limits by assuring that actual emissions are within those limits.

34. The provisions for the blast furnaces provide an example of the lack of practical enforceability found throughout the planned revised CAAPP permit in conjunction with the use of emissions factors.<sup>52</sup> Conditions 7.4.6(b) through (g) set out emission factors and emissions limits for the blast furnaces from the Production Increase Permit, Permit 95010001. Condition 7.4.9(i) then provides for compliance with these limits by requiring US Steel to keep records related to the emissions factors. This condition requires US Steel to maintain "a file containing the emission factors used by the Permittee to determine emissions of different pollutants from the various processes, with supporting documentation." US Steel is directed to review and update the emission factors to assure that "the emission factors that it uses to determine emissions of the processes do not understate actual emissions ..." However, Condition 7.4.9(i)(i) allows such reviewing and updating to occur "as necessary" and commits this determination to US Steel's sole discretion. By allowing US Steel to determine when it is "necessary" for a review or update, the planned revised CAAPP permit fails to ensure that such reviews and updates will ever occur. The Statement of Basis seems to expect that US Steel will make adjustments to the emissions factors based on testing conducted and measurements obtained for captured emissions.

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<sup>52</sup> Similar conditions are present in the planned revised CAAPP permit for certain source-wide emission limits (emission limits in Condition 5.6.2(a)(iii)(B) and records in Condition 5.9.1(d)(i)), material handling operations (emission limits in Condition 7.1.6 and records in Condition 7.1.9(f)), the Sulfur Recovery Units in the COG Desulfurization System ((emission limits in Condition 7.3(e)(i) and records in Condition 7.3.10(e)), the BOF shop (emission limits in Condition 7.5.6 and records in Condition 7.5.9(f)), the continuous casting operations ((emission limits in Condition 7.6.6 and records in Condition 7.6.9(c)), the reheat furnaces ((emission limits in Condition 7.7.7 and records in Condition 7.7.10(f))), Galvanizing Line 8 ((emission limits in Condition 7.8.7(b) and records in Condition 7.8.10(c)), Power Boiler #1 ((emission limits in Condition 7.10.6(a) and records in Condition 7.10.9(c)).

Statement of Basis at 89 and 89. However, the Statement of Basis is not enforceable and does not create additional obligations for US Steel.<sup>53</sup>

**Response: As acknowledged by this comment, the revised CAAPP permit would not leave the review and updating of emission factors to US Steel's sole discretion as to whether such review and updates actually occur. This permit imposes an obligation on US Steel to review and update records for emission factors "as necessary to assure that the emission factors that it uses ... do not understate actual emissions." This imposes a broad obligation on US Steel to assure the accuracy of the emission factors that it uses to determine its actual emissions for comparison to permit limits. This would reasonable necessitate review and consideration of new data that becomes available concerning the actual emissions of the operations that are subject to permit limits.**

35. For the blast furnaces, Condition 7.4.9(i) would also allow US Steel to change emission factors unilaterally, without review or approval by the Illinois EPA, without even notification to the Illinois EPA of the change. It would also not provide a mechanism for the public to obtain copies of the relevant records, thereby precluding public review and enforceability.<sup>54</sup> Although the revised CAAPP permit specifies that US Steel must review and update emission factors for the purpose of ensuring that they do not "understate" emissions from the affected units, allowing US Steel to make changes without Illinois EPA knowledge, review, or approval allows for precisely the opposite - US Steel may lower the emission factors at will. While US Steel would be required by Condition 7.4.10(c)(i) to report violations of the emissions limits that occur due to changes in the emissions factors, if it decides to lower the emissions factors, no violations will occur and the Illinois EPA will not know about or be able to independently evaluate the change. Because the emissions factors are a central part of the Periodic Monitoring in the planned revised CAAPP permit for permit emission limits and compliance requirements for the blast furnace operations, it is crucial that the correct factors be used.

**Response: As already explained, US Steel cannot lower emission factors "at will." Changes to emission factors are constrained by the factual information that supports the new factors, i.e., the information demonstrating that they do not understate the actual emissions of the subject operations as they currently exist and are being operated. US Steel must also keep a record of the support or documentation for the emission factors that it is using and any changes to those factors, either to lower or raise those factors. Moreover, the hypothetical situation put forth in this comment, i.e., US Steel "arbitrarily" lowering an emission factor to intentionally circumvent an applicable permit limit, would directly constitute an additional violation.<sup>55</sup>**

36. Because the emissions factors are a central part of the Periodic Monitoring in the planned revised CAAPP permit for permit emission limits and compliance requirements for the blast furnace operations, it is crucial that the correct factors be used. US Steel should not be given

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<sup>53</sup> See In the Matter of Los Medanos Energy Center at Note 15 (May, 24, 2004).

<sup>54</sup> Condition 7.4.9(i)(i) would only require that the emissions factors, including any updates to the factors that might result from US Steel's review, be kept on "file."

<sup>55</sup> As US Steel would intentionally or knowingly violate applicable requirements in the hypothetical situation suggested by this comment, US Steel would potentially be liable for criminal penalties under Section 113(c) of the Clean Air Act.

unlimited freedom to set the terms of its own compliance. The revised CAAPP permit should to require US Steel to submit any proposed changes in emission factors to the Illinois EPA for review and approval, after notice to the public with an opportunity for public comment.

**Response:** This comment does not demonstrate that either approval by the Illinois EPA or public involvement should be required before any changes to emission factors. A requirements for review and approval by the Illinois EPA of changes to these emission factors and opportunity for prior public involvement, as requested by this comment are not supported by and are contrary to applicable statutory requirements. As observed by this commenter, Section 39.5(7)(e) of the Act requires that Periodic Monitoring yield "reliable data from the relevant time period that is representative of the source's compliance with the permit." This does not require that such data be subject to review and approval by the Illinois EPA prior to reliance on such factors by US Steel. It also does not provide for opportunity for public review and comment upon such data prior to reliance on such data. The comment provides no legal basis to require either approval of such data by the Illinois EPA or opportunity for review of such data by the public prior to reliance on new data.

To the extent that such procedural steps were to be imposed, it would also arguably change the nature of the emission factors. Rather than being elements of the Periodic Monitoring for permit limits, they would become elements of the compliance procedures for the those limits, binding not only on US Steel but also on the State of Illinois and the public. As such, these procedural steps would potentially act to interfere with use of representative data, contrary to statutory requirements for Periodic Monitoring in Section 39.5(7)(e) of the Act. That is, these requested procedural steps could delay use of new, more representative data, arguably requiring use of data that is not representative of the operating configuration of a unit during a relevant time period. As such procedural requirements would act to delay use of new data, they could obscure the actual compliance status of the source relative to permit limit, either incorrectly showing compliance when it is not present or noncompliance when there is compliance.<sup>56</sup>

37. Because the emissions factors are a central part of the Periodic Monitoring in the planned revised CAAPP permit for permit emission limits and compliance requirements for the blast furnace operations, it is crucial that the correct factors be used.

**Response:** Upon further reflection, in response to this comment and other comments on the procedural requirements that accompany emission factors, the revised CAAPP permit issued by the Illinois EPA includes procedural requirements to facilitate supervision of these factors by the Illinois EPA and potential public involvement. It requires US Steel to submit to the Illinois EPA of copies of the various records that would be required by the permit related to emission factors. This is required when these records are initially created and whenever these records are subsequently revised. The submittal of copies of such records to the Illinois EPA will facilitate oversight or surveillance by the Illinois EPA of the emission factor used by US Steel. It will also enable the public to readily obtain

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<sup>56</sup> If the new factor is higher than prior factor, compliance could be shown when emissions actually exceed applicable limit(s). If the new factor is lower than the prior factor, noncompliance could be shown when emissions are actually within applicable limit(s).

copies of these records under Illinois' Freedom of Information Act and to review these records. This action is reasonable as it would involve information that is central to the approach to Periodic Monitoring for permit limits. It would only require submittal to the Illinois EPA of copies of records that US Steel would already be required to keep. It is also appropriate that full copies of these records be submitted. Simple notification for changes to emission factors would not provide the supporting documentation for a new factor, which is what the Illinois EPA will need the basis upon which US Steel has changed an emission factor.

### Provisions for Startup and Malfunction/Breakdown

38. In its review of the initial CAAPP permit, USEPA examined the malfunction and startup permit conditions and the SIP provisions on which those conditions were based. USEPA interpreted the permit conditions as advance permission to operate during malfunction and startup despite excess emissions. USEPA Order at 39. In the Statement of Basis, IEPA states that USEPA's interpretation of the permit is mistaken, and that, in IEPA's view, the malfunction, breakdown and startup provisions of the permit (and the Illinois SIP) do not provide for advance permission to operate despite violation of emission limits. Statement of Basis at 36-37. These divergent interpretations by USEPA and the Illinois EPA demonstrate that, at the least, the permit terms are not clear on this critical issue. The draft revised CAAPP permit does not remedy this concern; in fact, IEPA made only minimal edits to the relevant permit provisions, and devoted most of its effort (in the Statement of Basis) to disputing USEPA's interpretation of those provisions. The Illinois EPA should amend the terms of the permit so that they clearly reflect the framework of the SIP as described in the Statement of Basis.<sup>57</sup>

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<sup>57</sup> Even as explained by IEPA in the Statement of Basis, the Illinois SIP's startup and malfunction provisions are inconsistent with section 110 of the Clean Air Act and longstanding USEPA policy under either interpretation. We encourage IEPA to pursue revisions to 35 IAC 201.148, 201.261, 201.262, and 201.265 and propose those revisions for inclusion into the SIP.

Under section 110 of the Clean Air Act, a SIP must "provide for implementation, maintenance, and enforcement of" the NAAQS. Clean Air Act § 110(a). USEPA has long interpreted this mandate to mean that "all periods of excess emissions [are] violations of the applicable standard." Memorandum from Kathleen M. Bennett, Assistant Administrator for Air, Noise and Radiation, U.S. EPA on Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions to Regional Administrators, Regions I - X, U.S. EPA (Sep. 28, 1982) [hereinafter Bennett 1982]; see also Approval and Promulgation of Utah SO<sub>2</sub> Control Strategy, 42 Fed. Reg. 21,472, 21,437 (Apr. 27, 1977) (providing that a notice of violation would be issued for each instance of excess emissions regardless of cause) and Approval and Promulgation of Idaho SO<sub>2</sub> Control Strategy, 42 Fed. Reg. 58,171, 58,171 (Nov. 8, 1977) (same). This view is a reasonable interpretation of a statute that USEPA is charged to administer, see *Mich. Dept. of Env't'l Quality v. Browner*, 230 F.3d 181, 185 (6th Cir. 2000), and USEPA continues to reaffirm and follow it. Memorandum from Steven A. Herman, Assistant Administrator for Enforcement and Compliance Assurance, and Robert Perciasepe, Assistant Administrator for Air and Radiation, U.S. EPA on State Implementation Plans (SIPs): Policy Regarding Excess Emissions During Malfunctions, Startup, and Shutdown to Regional Administrators, Regions I - X (Sep. 20, 1999) [hereinafter Herman & Perciasepe].

SIP provisions granting prior permission to violate applicable standards are inconsistent with maintenance and enforcement of the NAAQS. Herman & Perciasepe at 1; Memorandum from Kathleen M. Bennett, Assistant Administrator for Air, Noise and Radiation, U.S. EPA on Policy on Excess Emissions During Startup, Shutdown, Maintenance, and Malfunctions to Regional Administrators, Regions I - X, U.S. EPA (Feb. 15, 1983) [hereinafter Bennett 1983]; Bennett 1982 at 1; see also *Mich. Dept. of Env't'l Quality*, 230 F.3d at 185. The decision not to enforce an emission limitation is

The initial CAAPP permit's conditions governing malfunction and breakdown appeared to USEPA as advance permission to operate despite emission violations. USEPA Order at 39. Advance permission to operate during these periods is inconsistent with the SIP because "[t]he specific proof required in each instance usually will depend on the nature and the cause of the malfunction or breakdown." Id. This must be a case-by-case determination. Id. Thus USEPA ordered the Illinois EPA to do one of two things. The Illinois EPA could "either [1] ... explain in the statement of basis how it determined in advance that the permittee had met the requirements of the Illinois SIP at 35 IAC 201.262, or [2] ... specify in the permit that continued operation during malfunction or breakdown will be authorized on a case-by-case basis if the source meets the SIP criteria." USEPA Order at 39-40.

USEPA made a similar determination for the startup provisions. In the permit conditions governing startup, IEPA failed to explain how it determined that US Steel "has made all reasonable efforts to minimize startup emissions, duration of startups and frequency of startups." Id. USEPA ordered IEPA to either "[1] explain how it determined in advance that the permittee had met the requirements of the Illinois SIP at 35 IAC 201.262, or otherwise [2] make appropriate changes to the permit and explain how the permit ensures compliance with the requirements of the SIP." Id.

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exceptional and is not to be made as a matter of course. Withholding enforcement may be appropriate, according to USEPA's interpretation of the Act, when there is a "sudden and unavoidable malfunction[] caused by circumstances entirely beyond the control of the owner and/or operator . . . ," but is never appropriate for "any activity which can be foreseen and avoided, or planned . . . ." Bennett 1982, Attachment at 1.

Provisions for withholding enforcement "must be narrowly drawn," because the SIP must "provide for implementation, maintenance, and enforcement of" the NAAQS. Id.; CAA § 110(a). Any provision for withholding enforcement of emission limitations must provide for a decision in each instance of excess emissions. Bennett 1982, Attachment at 1. Such a provision "must provide for the commencement of a proceeding to . . . determine whether enforcement action should be undertaken for any period of excess emissions." Id.

When violations are evaluated on a case-by-case basis, USEPA has specified requirements that sources must prove they have satisfied to avoid government enforcement:

1. To the maximum extent practicable the air pollution control equipment, process equipment, or processes were maintained and operated in a manner consistent with good practice for minimizing emissions.
2. Repairs were made in an expeditious fashion when the operator knew or should have known that applicable emission limitations were being exceeded. Off-shift labor and overtime must have been utilized, to the extent practicable, to ensure that such repairs were made as expeditiously as practicable.
3. The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions.
4. All possible steps were taken to minimize the impact of the excess emissions on ambient air quality.
5. The excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance.

Bennett 1983, Attachment at 2. Only unavoidable breakdowns that are entirely beyond the control of the owner or operator are considered malfunctions. Id., Attachment at 1. Excess emissions during startup and shutdown should be treated more stringently because "[s]tartup and shutdown . . . are part of the normal operation of a source and should be accounted for in the planning, design and implementation of operating procedures for the process control equipment." Id., Attachment at 3.

In response, the Illinois EPA explains in the Statement of Basis that it is not taking the first option. In other words, IEPA explains that it is not making advance determinations that US Steel has satisfied the SIP requirements for continued operation during malfunctions, breakdowns or startups. However, IEPA made no meaningful changes to the actual permit language to fulfill the second option. It failed to specify in the draft revised CAAPP permit that permission to continue operations during a malfunction, breakdown or startup will be allowed, if at all, on a case-by-case basis and that permission to operate does not, by itself, constitute a prima facie defense.

According to the Statement of Basis, permission to continue operation during malfunction/breakdown or startup is granted on a case-by-case basis. Statement of Basis at 36 (explaining that 35 IAC 201.262 "addresses the showing that must be made in order to make a viable claim of malfunction/breakdown or startup."), 37 ("[T]his case-by-case scrutiny is the second step provided for in Illinois' regulations."). This claim of malfunction/breakdown or startup is the second step of the overall process. Id. The "initial authorization" under 35 IAC 201.261 only allows the "opportunity to make a claim of malfunction/breakdown or startup." Id. IEPA explains that the "viability of [this] claim [is] subject to specific review against the [SIP and permit] requirements." Id. Under this interpretation, IEPA does not grant permission to operate in violation of applicable limits unless and until the source makes a successful claim of malfunction/breakdown or startup after the event has occurred.

The two-step process (culminating in a case-by-case determination on the evidence pertaining to the individual instance after it occurs) that IEPA describes in the Statement of Basis is not reflected in the draft revised CAAPP permit. While the Statement of Basis is not enforceable, the permit is. The permit does not clearly distinguish the "initial authorization" - which IEPA purports to grant in the permit - from permission to continue operation in violation of the applicable standards - which may not be granted, if at all, except on a case-by-case basis after the event occurs and the permittee demonstrates that it satisfied all of the SIP requirements. Nor does the permit distinguish between permission to continue operating, on the one hand, and the assertion of a defense to an enforcement action, on the other.

Any excuse that attaches prior to an enforcement action is inconsistent with federal and state law. Continued operation may only be requested when there is the danger of injury to persons or severe damage to equipment.<sup>58</sup> 35 IAC 201.262. Permission to operate despite excess emissions is therefore, by necessity, made under emergency circumstances and while events are still unfolding. Thus, the determination is made without any real evidence of the underlying circumstances, without full knowledge of how the permittee will actually respond to the emergency, and cannot constitute a prima facie defense under the SIP. Even the operator of the facility will not know exactly what happened until after the fact. The elements of this defense (discussed below) simply cannot be proven in the immediacy of a malfunction or breakdown, or unusual startup

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<sup>58</sup> Section 201.262 also mentions the provision of essential services as a ground for continued operation despite violations, but US Steel does not qualify for this ground. CAAPP permit application, Request to Continue Operation during Malfunction or Breakdown, Coke Oven Byproducts Plant at 2 (question 10b).

conditions. To avoid penalties for violations that may result from continued operation during malfunction/breakdown or startup circumstances, the permittee must raise the prima facie defense in an enforcement proceeding (if one is brought).

Both Illinois and federal law support this distinction between permission to operate despite violations and the opportunity to avoid penalties for those violations. USEPA has explained that section 110 of the Clean Air Act requires that all excess emissions be considered violations. See Bennett 1983 at 1; Herman & Perciasepe at 1; see also Mich. Dept. of Env't'l Quality, 230 F.3d at 185. Any affirmative defense provision must entail a specific set of elements, on which the violator bears the burden of proof in order to avoid having to pay penalties for those violations. Herman & Perciasepe, Attachment at 3-4. Further, no decision by the Illinois enforcement authorities can preclude USEPA or citizen enforcement. Herman & Perciasepe at 3. The Illinois Environmental Protection Act also distinguishes the existence of a violation from its severity and vests the power to decide the severity of a violation in the Pollution Control Board. 415 ILCS 5/42(h).

The permit repeatedly states that authorization is being granted - in advance of any malfunction/breakdown or startup - to continue operation in violation of the applicable standards.<sup>59</sup> These permit provisions are inconsistent with IEPA's interpretation of the SIP as set forth in the Statement of Basis. Each of the permit conditions governing malfunction/breakdown or startup should be amended to clearly state that the only authorization granted by the permit is the authorization to request permission to continue operation during malfunction/breakdown or startup, and that no violation, even with permission to continue operations, is being excused from a potential enforcement action.<sup>60</sup>

In its CAAPP application, US Steel acknowledged that it does not, and cannot, know in advance the information required by 35 IAC 201.261 and 201.262. The application repeatedly states that information about malfunction, breakdown and startup required by the SIP cannot be known in advance. For example, in its request for advance permission to continue operation during malfunction or breakdown for coke ovens (which corresponds to Condition 7.2.5-4), US Steel states that "[t]he quantities of air contaminants emitting during malfunction or breakdown conditions are directly related to the specific type of malfunction or breakdown condition and thus cannot be determined on a prior basis." CAAPP permit application, Request to Continue Operation during Malfunction or Breakdown for Coke Ovens "A" and "B" (Including Pushing, Charging and Fugitives), Exhibit 204-1 at 2 [hereinafter Coke Oven Malfunction

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<sup>59</sup> See, e.g., Condition 7.2.5-5.a ("the Permittee is authorized to continue operation of the affected coke oven batteries in violation of the applicable state standards") (emphasis added), id. ("This authorization supersedes the general prohibition in Condition 9.2.3 against continued operation ...") (emphasis added), 7.2.5-5.a.v (referring to "authorization in a permit for continued operation with excess emissions during malfunction and breakdown") (emphasis added); see also, Permit condition 7.2.5-4 ("the Permittee is authorized to continue operation of the affected coke ovens in violation of the applicable standards . . .") (emphasis added) and 7.2.5-4.d ("authorization in a permit for excess emissions during startup") (emphasis added).

<sup>60</sup> Conditions 7.2.5-5.a, 7.3.5, 7.4.5-2.b.i, 7.5.5-2.b and 7.10.3.j address malfunction/breakdown, and permit conditions 7.2.5-4, 7.4.5-2.b.ii, 7.7.5, 7.10.3.i address startup. All should be amended.

Authorization Request] (emphasis supplied).<sup>61</sup> The duration of excess emissions is uncertain for the same reason. Id.<sup>62</sup> Under the SIP, IEPA may not grant permission to continue operation in violation of the applicable standards until it has evaluated these facts, which are plainly unknown at the time of permit issuance.

The same is true for the nature and cause of breakdowns or malfunctions. For instance, the Coke Oven Malfunction Request mentions three "typical" breakdown modes. US Steel does not purport to enumerate all of the possible breakdown modes.<sup>11</sup> Nor does US Steel specify the cause of each mode, as the IEPA form requests. Compare Coke Oven Malfunction Authorization Request at 1 (see question 6) with id., Exhibit 204-1 at 1-2. This omission is understandable because the types of breakdowns and malfunctions potentially eligible for this permission to continue operation are inherently unpredictable. Statement of Basis at 37 ("Due to the size and complexity of the source and the inability to simply shutdown equipment or the level of hazards associated with improper start-up or shutdown, the source may experience excess emissions due to events that cannot be readily anticipated or reasonably avoided."). Normally, the nature and cause of a breakdown or malfunction can only be determined after it has actually occurred. See USEPA Order at 39.

It is also impossible to evaluate in advance the mitigation efforts that US Steel may or may not take once a malfunction/breakdown occurs. The SIP requires the permittee to describe "all measures ... which will be taken to minimize the quantity of air contaminant emissions and length of time during which such operation will continue." 35 IAC 201.261(a); Form 204 CAAPP at 2 (see questions 8 and 9).<sup>63</sup> US Steel repeatedly restates the regulatory boilerplate; that "[a]<sup>64</sup> measures shall be taken to minimize

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<sup>61</sup> See also CAAPP permit application, Request to Continue Operation during Malfunction or Breakdown, Coke Oven Byproducts Plant, Exhibit 204-1 at 1 (stating that the quantity of emissions depends on the type of malfunction and "thus cannot be determined on a prior basis"); id., Request to Continue Operation during Malfunction or Breakdown, Blast Furnaces "A" and "B" and Blast Furnace Casthouse, Exhibit 204-1 at 2 (same); id., Request to Continue Operation during Malfunction or Breakdown, BOF, Exhibit 204-1 at 1 (same); id., Request to Continue Operation during Malfunction or Breakdown, Boilers 11 & 12, Exhibit 204-1 at 2 (same); id., Request to Continue Operation during Malfunction or Breakdown, Boilers 1-10, Exhibit 204-1 at 2 (same); id., Request to Operate during Startup of Equipment, Blast Furnaces "A" and "B" and Blast Furnace Casthouse, Exhibit 203-2 at 3 (stating that the quantities of emissions "cannot be determined on a prior basis"); id., Request to Operate during Startup of Equipment, Boilers 11&12, Exhibit 203-2 at 2 (same); id., Request to Operate during Startup of Equipment, Boilers 1-10, Exhibit 203-2 at 2 (same).

<sup>62</sup> See also CAAPP permit application, Request to Continue Operation during Malfunction or Breakdown, Coke Quenching, Exhibit 204-1 at 1 (stating that the will duration vary depending on the type of malfunction or breakdown); CAAPP permit application, Request to Continue Operation during Malfunction or Breakdown, Coke Oven Byproducts Plant, Exhibit 204-1 at 1 (same); id., Request to Continue Operation during Malfunction or Breakdown, Blast Furnaces "A" and "B" and Blast Furnace Casthouse, Exhibit 204-1 at 2 (same); id., Request to Continue Operation during Malfunction or Breakdown, BOF, Exhibit 204-1 at 1 (same); id., Request to Continue Operation during Malfunction or Breakdown, Boilers 11 & 12, Exhibit 204-1 at 2 (same); id., Request to Continue Operation during Malfunction or Breakdown, Boilers 1-10, Exhibit 204-1 at 2 (same).

<sup>63</sup> Available at <http://www.epa.state.il.us/air/caapp/204caapp.pdf>

<sup>64</sup> For its coke ovens, US Steel lists three typical malfunctions: "[c]onstriction in the piping system," "malfunction of the automatic pressure-regulation system for the raw coke oven gas collecting mains," and "[p]lugged charging holes." Coke Oven Malfunction

the quantity of emissions and the duration of such emission due to malfunctions or breakdowns," and lists measures to illustrate good operation of its equipment. See, e.g., Coke Oven Malfunction Authorization Request at 2 (see questions 8 and 9).<sup>65</sup> Just as the causes of breakdown and malfunction are not known in advance, the measures that will be required and that will actually be taken to deal with them are also unpredictable and inherently unknowable until they actually occur. Even the best-laid plans are rarely executed precisely as anticipated. US Steel has not described all of the measures it will take to minimize the quantity and duration of excess emissions because it cannot know in advance what measures will be required and what measures will, in fact, be taken.

In the Statement of Basis, the Illinois EPA interpreted the SIP in a way that attempts to address USEPA's concerns regarding advance approvals. Illinois EPA, USEPA, and US Steel all agree that the circumstances surrounding a claimed malfunction or breakdown cannot be known and evaluated until such an event occurs. The permit conditions, however, do not reflect this understanding and must be amended. The permit should be revised to make clear that IEPA is not granting advance permission to continue operations during startup, malfunction, or breakdown. The permit conditions cited in footnote 4 should be amended accordingly.

The prima facie defense provisions in the permit are ambiguous and should be clarified.<sup>66</sup> The defense of 35 IAC 201.265 that IEPA has incorporated

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Authorization Request, Exhibit 204-1 at 1-2. The causes of these typical breakdown modes are not specified. Id.

<sup>65</sup> See 35 IAC § 201.261(a); see also CAAPP permit application, Request to Continue Operation during Malfunction or Breakdown, Coke Quenching, Exhibit 204-1 at 1.

<sup>66</sup> The prima facie defense provision of 35 IAC 201.265 is inconsistent with USEPA policy. First, affirmative defense provisions are inappropriate where "a single source or a small group of sources has the potential to cause an exceedance of the NAAQS or PSD increments." Herman & Perciasepe at 2. The US Steel facility is a major source of criteria pollutants and one of a small group of sources that have caused air quality to exceed the NAAQS. See Illinois Environmental Protection Agency, Technical Support Document for Recommended Nonattainment Boundaries in Illinois for the 24-Hour PM<sub>2.5</sub> National Ambient Air Quality Standard, figures 8a-8e (Dec. 18, 2007), available at <http://www.epa.state.il.us/public-notices/2007/pm25-standards/figures.pdf>. Second, decisions by state enforcement authorities must not interfere with USEPA or citizen enforcement under the federal Clean Air Act. Herman & Perciasepe at 3. Third, affirmative defenses are available in actions for civil penalties; there is no defense in an action seeking an injunction.

In addition to these limitations, USEPA requires a specific showing, as follows, to invoke an affirmative defense. The source bears the burden to demonstrate each of the following ten elements to establish a defense. These elements apply to a defense for malfunction. Defenses for startup and shutdown are similar.

1. The excess emissions were caused by a sudden, unavoidable breakdown of technology, beyond the control of the owner or operator;
2. The excess emissions (a) did not stem from any activity or event that could have been foreseen and avoided, or planned for, and (b) could not have been avoided by better operation and maintenance practices;
3. To the maximum extent practicable the air pollution control equipment or processes were maintained and operated in a manner consistent with good practice for minimizing emissions;
4. Repairs were made in an expeditious fashion when the operator knew or should have known that applicable emission limitations were being exceeded. Off-shift labor and overtime must have been utilized, to the extent practicable, to ensure that such repairs were made as expeditiously as practicable;
5. The amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions;

in the permit is a procedural provision. But the permit fails to clearly specify the procedure by which it may be invoked. The defense provision allows the permittee to raise a defense in an enforcement action, but with an important limitation. According to the SIP, the defense is limited to situations where the permittee has "full[y] compli[ed] with any terms and conditions connected" with the permission that IEPA may eventually grant. 35 IAC 201.265. The permit conditions repeat this limitation but without explaining its significance. E.g., Permit condition 7.2.5-4.d. Read together with the provisions purporting to grant advance authorization to operate during malfunction, breakdown, or startup in violation of applicable limits, the permit impermissibly suggests that IEPA has handed out "free violation" passes throughout the permit. We trust that that was not its intent, and we urge IEPA to revise the permit to make that clear.

The initial authorization that appears in the permit cannot be sufficient to raise the prima facie defense because the authorization is granted without regard to whether the permittee has fully complied with the terms and conditions of the SIP. Allowing US Steel to raise a prima facie defense without first showing that it had complied with the SIP and permit requirements would read the limitation out of 35 IAC § 201.265. Regulations, like statutes, must be interpreted to "avoid[] an interpretation that would render any portion of the statute meaningless or void." *Perez v. Illinois Dept. of Children and Family Services*, 894 N.E.2d 447, 451 (Ill. App. 2008) (quoting *Cassens Transport Co. v. Industrial Comm'n*, 844 N.E.2d 414, 419 (Ill. 2006)). The only way to give all of the language in 35 IAC 201.265 some effect is to allow the defense to be asserted after the permittee proves, in defending an enforcement proceeding, that it satisfied the applicable requirements. In other words, compliance with the permit and the SIP are the elements of the defense.

This is the only interpretation of 35 IAC 201.265 that comports with federal law. Affirmative defenses for violations of emission limits are not available (or even relevant) until enforcement has commenced. The violator must prove the elements of the defense to raise the defense and potentially avoid civil penalties. See *Herman & Perciasepe*, Attachment at 3-4. See also 40 CFR 63.7575 (defining "affirmative defense" to mean, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.). The permit conditions that refer to 35 IAC 201.265 should be modified to make clear

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6. All possible steps were taken to minimize the impact of the excess emissions on ambient air quality;
  7. All emission monitoring systems were kept in operation if at all possible;
  8. The owner or operator's actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs, or other relevant evidence;
  9. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and
  10. The owner or operator properly and promptly notified the appropriate regulatory authority.

*Herman & Perciasepe*, Attachment at 3-4.

These elements apply to a defense for malfunction. Defenses for startup and shutdown are similar.

that the defense may be asserted as a defense to an enforcement action by proving compliance with the SIP and permit requirements.<sup>67</sup>

Response: This comment continues to reflect concern for Illinois' State Implementation Plan (SIP) relating to malfunction, breakdown and startup and its application in the iterations of the CAAPP permit for US Steel. Significantly, the SIP was long ago approved by USEPA. An examination of the SIP is not appropriate in the context of the review of the revised CAAPP permit.<sup>68</sup> Rather, in the current context, the appropriate scope of review is whether any conditions embodying the SIP, as interpreted by the Illinois EPA, satisfy the requirements of the CAAPP.

In response to this comment, Illinois EPA once again has reviewed the language of the SIP and the language of the permit. As a result, and without significant alteration in interpretation or approach, slight enhancements were made to the text of the relevant provisions, which appear in the issued revised CAAPP permit. The revisions were made to more clearly reflect the authorizations at issue and attendant obligations. More noteworthy, recordkeeping requirements related to malfunctions and breakdowns were enhanced. Recordkeeping and reporting requirements related to startups were also enhanced.

In large measure, the comments relate to the particular nature of Illinois' SIP. And again, while the SIP is not the current subject of review, additional discussion of same may prove helpful. Notably, contrasted with like federal provisions, Illinois' regulations for malfunction, breakdown and startup, in the first instance, must be addressed by permit. As set forth in 35 IAC 201.149, a source may not continue to operate during a malfunction or breakdown nor startup in violation of specified standards or limitations unless such continued operation during malfunction or breakdown or the startup are provided for by permit. Similarly, under 35 IAC Subpart I, absent this permit authorization a source would not be in a position to raise a defense (prima facie) to any enforcement action for violations of certain standards or limitations resulting from continued operation during malfunction or breakdown or from startup. As such, the SIP necessitates permitting decisions related to malfunction, breakdown and startup in advance of any actual malfunction, breakdown or startup event.

It is this permitting decision that occurs in advance of any malfunction, breakdown or startup event that continues to give rise to concern.

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<sup>67</sup> The permit conditions that require amendment are Conditions 7.2.5-4(d), 7.2.5-5(a)(v), 7.3.5(e), 7.4.5-2(b)(i)(F), 7.4.5-2(b)(ii)(E), 7.5.5-2(b)(vii), 7.7.5(d), 7.10.3(i)(iv) and 7.10.3(j)(vi).

<sup>68</sup> Federal guidance relating to startup, shutdown and malfunctions was not intended to alter approved SIPs. See USEPA memorandum from Eric Schaeffer, Director, Office of Regulatory Enforcement, Office of Enforcement and Compliance Assurance, and John S. Seitz, Director, Office of Air Quality Planning and Standards, Office of Air and Radiation, to Regional Administrators, Regions I-X, Re-Issuance of Clarification-State Implementation Plans(SIPS): Policy Regarding Excess Emissions During Malfunctions, Startup, and Shutdowns (Dec. 5, 2001). This position regarding the federal SSM guidance has been reiterated by USEPA in response to petitions to object to Title V permit. See, In re Monroe Power Co., Order of EPA Administrator, Pet. No. IV- 2001-8 (Oct. 9, 2002). This position regarding approved SIPs generally likewise has been espoused by USEPA. See, In re Pacificorp's Jim Bridger and Naughton Electric Utility Steam Generating Plants, Pet. No. VIII-00-1 (Nov. 16, 2000).

However, the concern is misplaced. The permit does not determine and does not provide that violations of specified standards or limitations are not violations (nor does the SIP). Further, the permit does not determine the viability of any defense (prima facie) that may be made in response to any enforcement action (nor does the SIP). Rather, the permitting determination for malfunction and breakdown relates to whether continued operation would potentially be necessary, as a general matter, to prevent injury to personnel or severe damage to equipment. For startup, the permitting determination relates to procedures and emissions minimization efforts for typical startup events. The additional determinations made in the permitting context are those pertaining to the establishment of terms and conditions that should be imposed in association with the authorization for continued operation during malfunction and breakdown and for startup.

The revised CAAPP permit for US Steel, which is the subject of review in the current context, affords permission to continue to operate during malfunction and breakdown and to startup in violation of specified standards and limitations and delineates attendant terms and conditions. Generally, these terms and conditions require efforts to minimize emissions as well as recordkeeping and reporting for malfunction, breakdown and startup events. The original CAAPP permit issued to US Steel permit generally required this. This revised CAAPP permit contains enhancements to those requirements. It is adherence to these terms and conditions and the incident specific particulars embodied in records and reports that will bear on the viability of any defense (prima facie.) Otherwise stated, the viability of the any defense hinges on the source complying with the letter of the terms and conditions, and on event specific information. If US Steel utilizes the authorization provided by permit and satisfies the attendant terms and conditions, it remains subject to enforcement but may have a viable defense to such action. Conversely, if US Steel utilizes the authorization provided by permit, but fails to satisfy the attendant terms and conditions, while it might attempt to assert a prima facie defense in response to any enforcement action, the viability of such defense would be at issue. Thus, Illinois' SIP as implemented by the CAAPP permit at issue provides for case-by-case review of malfunction, breakdown and startup events, separate and distinct from the limited permitting determination(s). That case-by-case review occurs after the malfunction, breakdown or startup event in the enforcement context. As such, this response and the enhancement made in the revised CAAPP permit that has been issue appropriately address the concerns set forth in this comment.

#### Compliance Schedules

39. ABC's Petition requested USEPA to object to the CAAPP permit because it did not include an enforceable compliance schedule regarding the implementation of the basic oxygen furnaces provisions of a 2007 Consent Order, No. 05-CH-750, entered in Illinois ex. Rel. Lisa Madigan Herman & v. U.S. Steel Corporation, Inc. USEPA granted the Petition on this ground, and directed Illinois EPA to include in the revised CAAPP permit a compliance schedule containing "an enforceable sequence of actions with milestones, leading to compliance." USEPA Order, pp. 34-35, quoting 40 CFR 70.5(c)(8)(iii)(C). The planned revised CAAPP permit contains two "compliance schedules," one pertaining to dioxide emissions associated with blast furnace gas (BFG) (Condition 7.4.13; see also Condition

5.6.2(a)(iii)(A) and (B)). Both schedules are inscrutable and lacking in enforceability.

**Response: The Illinois EPA disagrees with this comment. The fact that the requirements of a compliance schedule are simple and straightforward does not mean that they are not enforceable. The fact that a particular individual does not understand the schedules also does not make them either unenforceable or inscrutable.**

40. The 2007 Consent Decree required US Steel to submit a detailed compliance schedule regarding basic oxygen furnace operations by March 31, 2008, and to implement that schedule by June 30, 2008. Some three years later, those "deadlines" apparently remain unfulfilled. When Illinois EPA issued the CAAPP permit in September 2009, it noted that while US Steel had submitted one or more proposed compliance schedules, none was approvable or approved. The CAAPP permit's "compliance schedule" simply set another deadline - US Steel was to submit another proposed BOF compliance schedule, as required by the Consent Decree, by August 30, 2009. The planned revised CAAPP permit includes a "compliance schedule" with two basic elements: (1) US Steel is to "certify compliance" by March 31, 2011, Condition 7.5.13(a); and (2) US Steel is to submit quarterly progress reports "beginning September 2011 and ending upon the achievement of compliance." Condition 7.5.13(b)-(c). Neither the planned revised CAAPP permit nor the Statement of Basis explains what is meant by the requirement that US Steel "certify compliance." The outstanding non-compliance as of the issuance of the initial CAAPP permit was the submission of an approvable compliance schedule, as well as the implementation of that schedule. It is not at all clear whether the compliance that US Steel must certify by March 31, 2011 (per Condition 7.5.13(a) of the planned revised CAAPP permit) is the submission of an approvable (or approved?) compliance schedule, or rather the complete implementation of the items in that compliance schedule. The fact that Condition 7.5.13(b) requires US Steel to begin submitting quarterly progress reports in September 2011 and continue until "completion of all required commitments and certification of compliance" (Condition 7.5.13(c)) suggests that the compliance certification required by Condition 7.5.13(a) may only signal that a compliance schedule is at last - three years late - in place. In any event, the ambiguity compromises the enforceability of this compliance schedule. Illinois EPA should make its terms sufficiently clear that it can indeed ensure that US Steel comes into compliance with this long-outstanding commitment of the 2007 Consent Decree. Not only does the compliance schedule lack clarity; it also fatally lacks specificity. It provides no information as to what US Steel must actually do to achieve full compliance. The information to be included in the quarterly progress reports required by Condition 7.5.13(b) is stated in the most vague of terms: "the required date for achieving commitments" and actual dates; "commitments accepted by the Permittee or otherwise established for the affected BOF as part of the resolution of the above referenced Consent Order"; "progress in complying with commitments that are subject to future deadlines"; and "an explanation" of why any commitments were not met and "any preventive or corrective measures adopted to achieve required commitment." Perhaps US Steel knows precisely what is expected of it. Perhaps someone at Illinois EPA also knows. If those people retire or move to other employment, it is questionable whether anyone else will know what is expected. If US Steel fails to comply with this "compliance schedule" and Illinois EPA (or USEPA, or citizens) seek to enforce the permit in court, it is highly

unlikely that any judge will be able to determine what this "compliance schedule" required of US Steel. The compliance schedule in the permit does not meet the Title V standard of including an "enforceable sequence of actions with milestones, leading to compliance." USEPA Order at 35, quoting 40 CFR 70.5(c)(8)(iii)(C).

**Response:** This comment calls into question the framework and the level of specificity associated with the compliance schedule for the BOF Furnaces contained in Condition 7.5.13. Recent developments, however, effectively render these comments moot and/or largely inconsequential. Shortly before the close of the recent public comment period, US Steel notified the Illinois EPA that it had satisfied its obligations under the Consent Order regarding the BOF Furnaces.<sup>69</sup> The Illinois EPA has not completed its assessment of whether the compliance schedule relative to the BOF Furnaces has been implemented in its entirety. Pending that determination, which should be made imminently, the Illinois EPA has concluded that it is appropriate for the compliance schedule at issue to remain in the revised CAAPP permit as a temporary place-holder.

41. A fundamental question for the Compliance Schedule in Condition 7.4.13 regarding the sulfur content of BFG is what non-compliance is this Compliance Schedule designed to remedy? The only Compliance Schedule issue in the Petition pertained to the BOF provisions of the 2007 Consent Decree. Neither the planned revised CAAPP permit nor the associated Statement of Basis answers this question.<sup>70</sup> The revised CAAPP permit must make clear what non-compliance triggered the need for this compliance schedule, if indeed it was triggered by non-compliance.

**Response:** The non-compliance addressed by this Compliance Schedule was discussed on page 17 of the Statement of Basis. As related to the relevant Consent Order, Madison County, No. 05-CH-750, as filed September 14, 2005, the Statement of Basis explains that a supplemental complaint alleged "permit and prevention of significant deterioration violations from the combustion of blast furnace gas." It further explains that the planned revised CAAPP permit includes compliance schedules "...derived through the orders entered under this enforcement action." Moreover, as demonstrated by subsequent comments, this commenter is aware of this Consent Order and its requirements.<sup>71</sup>

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<sup>69</sup> In the Statement of Basis for the revised CAAPP permit, the Illinois EPA foresaw the possibility that US Steel could complete the milestones relating to the updated compliance schedule for the BOF Furnaces and thereby negate the necessity for the inclusion of a compliance schedule. See, Statement of Basis at page 157-158. At that time, only a single milestone remained for US Steel to complete.

<sup>70</sup> While the compliance schedule in the planned revised CAAPP permit's for the BOF (Condition 7.5.13) and the Statement of Basis (pp. 17 and 157-158) specifically reference the 2007 Consent Decree, neither the planned revised CAAPP permit nor the Statement of Basis provides any explanation as to the need for a compliance schedule regarding the SO<sub>2</sub> content of BFG.

<sup>71</sup> By way of further explanation for persons who may not be familiar with Consent Order No.-CH-750, a construction permit issued in 1996 for a production increase at the source, Permit 95010001> This construction permit was based on certain information for the sulfur content of BFG, as submitted in the permit application. A number of years after the permit was issued, this information was determined to be incorrect, understating the actual sulfur content of BFG. As a consequence, SO<sub>2</sub> emissions from use of BFG at the source have been greater than allowed by the certain emission limits established by Construction Permit 95010001.

Incidentally, the revised CAAPP permit that has been issued does better identify the action that is the basis for this compliance schedule. This was done so by restoring language from the original CAAPP permit that was unnecessarily removed from the planned revised CAAPP permit, with minor changes to the wording and placement of this information.

42. The Consent Order does not explain why the prior emission factor needed correcting. The Compliance Schedule addressing also these provisions also does not answer this question or explains the nature of US Steel's non-compliance that led to the Consent Order.

**Response: The factor for SO<sub>2</sub> emissions from BFG was incorrect because it was based on an incorrect value for the sulfur content of BFG that understated the sulfur content. Accordingly, the emission factor also understated SO<sub>2</sub> emissions.**

43. The planned revised CAAPP permit would include limits on total annual SO<sub>2</sub> emission from a collection of fuel combustion units and limits on annual SO<sub>2</sub> emissions associated with the usage of various fuels in those units (Conditions 5.6.2(a)(iii)(A) and (a)(iii)(B), respectively). The emission limits in these conditions reflect stated emission factors and limits established in Construction Permit 95010001, which authorized a Production Increase. Each of these conditions indicates that the limits on SO<sub>2</sub> emission associated with use of BFG are subject to the Compliance Schedule in Condition 7.4.13 of the permit. The Compliance Schedule appears to repeat some provisions of a Consent Order pertaining to SO<sub>2</sub> emissions from use of BFG. The Consent Order required US Steel to submit an application to revise the 1996 Production Increase Permit "as necessary to reflect the corrected emission factor for the Blast Furnace Gas SO<sub>2</sub> emissions." The Consent Order further requires US Steel to "use the correct emission factor" "in the interim" for "calculating, recording, and reporting SO<sub>2</sub> emissions," requiring it do so immediately. However, the Consent Order does not explain what the "correct emission factor." Neither the planned revised CAAPP permit nor the Statement of Basis sheds any light as to what the "correct emission factor" is. Moreover, it appears that the Illinois EPA and US Steel have already agreed upon the "correct emission factor," although it is not yet formally incorporated into a revised Production Increase Permit.<sup>72</sup> If that is the case, then the Statement of Basis should at least inform the public as to the nature of the mysterious "correct emission factor." In addition, the planned revised CAAPP permit provides no documentation that the "correct" emission factor is "representative of US Steel's operations or that it is supported by a demonstration "that the emissions will not vary by a degree that would cause an exceedance of the standards," as required by USEPA's Order (p. 14) regarding the disfavored use of emission factors to determine compliance with emission limits.

**Response: There is nothing "mysterious" about the correct factor for SO<sub>2</sub> emissions from use of BFG. The correct "factor" is a factor that would accurately determine SO<sub>2</sub> emissions. As such, it is a factor based on actual measurements of the sulfur content of BFG that would not understate the actual SO<sub>2</sub> emissions from use of BFG, reflecting either the actual sulfur content of BFG or a conservative value for the sulfur**

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<sup>72</sup> The fact that the Consent Order requires US Steel to immediately use the "correct emission factor" suggests that the Illinois EPA and US Steel have already agreed upon the "correct emission factor."

content of BFG that is higher than the actual sulfur content. It is also a factor that would not necessarily be fixed, as the factor would have to track any increases in the actual sulfur content of BFG as shown by actual sampling and analysis for the sulfur content of BFG.

44. The revised CAAPP permit should clarify the requirement to use the "correct" SO<sub>2</sub> emission factor for BFG and the documentation supporting this factor.

**Response:** The revised CAAPP permit requires that SO<sub>2</sub> emissions from the BFG be determined based on the actual sulfur content of BFG. Condition 7.10.8-1 requires that BFG be sampled and analyzed on at least a quarterly basis to determine its sulfur content. In addition, Condition 5.9.1(d)(ii) in the revised CAAPP permit issued by the Illinois EPA requires records for the sulfur content of BFG, which information is to be used when determining the SO<sub>2</sub> emissions from use of BFG by the source.

45. The Compliance Schedule in Condition 7.4.13 requires US Steel to "[w]ork with the Illinois EPA, including providing additional information to the agency when requested." Is this not required of every regulated entity?

**Response:** The provision of the Compliance Schedule addressed by this comment is an explicit requirement of the Consent Order. Accordingly, it is appropriate that it be included in the Compliance Schedule.

46. The Compliance Schedule in Condition 7.4.13 related to the sulfur content of BFG is too vague to be enforceable because it requires US Steel to "[o]btain a revised PSD Construction Permit" - with the timing "[s]ubject to Agency final issuance." I understand US Steel has already applied for this revised permit, with an application filed in early 2008 to modify the 1996 permit for a production increase. Why is obtaining a revision to this permit necessary to resolve the outstanding violation?

**Response:** While the requirement for US Steel to obtain a revised PSD permit, i.e., a revision to the 1996 permit for a production increase, is simple, it is neither vague nor unclear. A revision to the PSD permit is needed because its terms have been violated. The resolution agreed upon for this violation, as memorialized in the relevant consent order entered into by the State of Illinois and US Steel, is for US Steel to obtain a revision to that permit.

47. Inasmuch as the Illinois EPA is allowing US Steel to employ this disfavored means of demonstrating compliance with applicable emission limits, the revised CAAPP permit should also provide for an appropriate modification to the permit to ensure that Illinois EPA reviews and approves the "correct" emission factor, that the public has an opportunity to comment on the revised emission factor.

**Response:** As already discussed, the Illinois EPA is not allowing US Steel to use a "disfavored means" to demonstrate compliance with applicable limits. US Steel is required to use "real" data for the sulfur content of BFG when determining its actual SO<sub>2</sub> emissions. In addition, a process has been initiated for issuance of a revised PSD permit to rectify historical permitting for the source, which was based on incorrect data for the sulfur content of BFG. This process will involve "approval" by the Illinois EPA, as it involves the issuance of a revised PSD permit. It will also entail an opportunity for public review and comment, as this

must occur before the revised PSD permit may be issued. Finally, it should be noted that these actions will take place in the appropriate legal and administrative forum through revision to a PSD permit, rather than through modification of a CAAPP permit.

48. The Compliance Schedule for the BOF furnaces in Condition 7.5.13 is now obsolete. In March 2011, US Steel demonstrated compliance and certified compliance with requirements of Consent Order 05-CH-750 for the BOF furnaces, consistent with this order.

**Response:** The Illinois EPA agrees that US Steel has submitted written documentation in which it asserts that it has satisfied its obligations under the Consent Order as pertain to the BOF furnaces. As noted in the Statement of Basis that accompanied the planned revised CAAPP permit, the Illinois EPA anticipated that US Steel would have completed these obligations before issuance of the revised CAAPP permit. However, as the Illinois EPA has not yet completed its assessment of compliance in this regard, the schedule at issue in this comment remains in the revised CAAPP permit issued by the Illinois EPA.

#### Provisions of the NESHAP Rules for Boilers and Process Heaters

49. Condition 7.10.3(b) of the planned revised CAAPP permit would lack enforceability. This condition deals with applicability of 40 CFR 63 Subpart DDDDD (the Boiler NESHAP) to Boilers #11 and #12. Condition 7.10.3(b)(i) states that Boilers #11 and #12 "may be" subject to emissions limits in the Boiler NESHAP "if" Boilers #11 and #12 fall under the subcategory of boilers that fire "other gas 2 fuels." The use of "may be" and "if" fails to specify US Steel's obligations under the Boiler NESHAP and compromises the enforceability of this condition. Boilers #11 and #12 are capable of burning natural gas, coke oven gas, and BFG. They are therefore within the "Unit[s] designed to burn gas 2 (other) Subcategory" of boilers under 40 CFR 63 Subpart DDDDD. As boilers that fire "other gas 2 fuels," Boilers #11 and #12 are subject to applicable emission limits under the NESHAP rules. Thus, the revised CAAPP permit should not indicate that Boilers #11 and #12 "may be" subject to NESHAP standards but presumptively impose on the applicable NESHAP requirements for boilers firing "other gas 2 fuels" on these boilers, to be met by the applicable compliance date, presumably in three years. According to the Statement of Basis, US Steel can avoid having to comply with the applicable NESHAP requirements for Boilers #11 and #12 by altering the fuel-mix for the boilers before the scheduled date of compliance in three years. Statement of Basis at 119.

**Response:** The Illinois EPA has reviewed the language in Condition 7.10.3(b) and confirmed that the language appropriately addresses the circumstances of Boilers #11 and #12. When Condition 7.10.3(b)(i) is examined in context, the phrase "may be" is not misplaced. While the word "may be" might suggest that these boilers are not subject to the Boiler NESHAP, the condition does not relate to whether the source will comply, but rather to the available options for the categorization or classification of these boilers under the Boiler NESHAP. Given there are three years before this determination is required by the NESHAP rules, it is not appropriate for the revised permit now being issued to presume

what this status will be.<sup>73</sup> This is especially true as the Boiler NESHAP contemplates that determination of the status of units relative to the Boiler NESHAP will be made in the context of the Initial Compliance Notifications required for this NESHAP.<sup>74</sup> Accordingly, the words "may be" and "if" are appropriate in Condition 7.10.3(b) of the revised permit.

Consistent with the above discussion, as the revised permit must address the possibility that Boilers #11 and #12 will be subject to the Boiler NESHAP as existing boilers burning Gas 2 fuels, the permit appropriately sets forth the requirements for such units in the event that they are applicable. (See Conditions 7.10.3(b)(ii), 7.10.5-1, 7.10.7-2, 7.10.8-2, 7.10.9(h) and 7.10.10(f)).)

Moreover, as addressed in the Statement of Basis, the relevant issue is not what Boilers #11 and #12 were designed for. The issue is whether under the NESHAP they would meet the definition for a "blast furnace gas fuel-fired boiler or process heater," at 40 CFR 63.7575.<sup>75</sup> In this regard, more information is now available about the mix of fuels that are fired in these boilers. US Steel has submitted information indicating that in calendar year 2010, Boilers #11 and #12 would have qualified as BFG fired boilers, as BFG was more than 90 percent, by volume, of the fuel burned in these boilers. In addition, the Illinois EPA made a further review of the fuel usage for 2005 through 2010 using information submitted in Annual Emission Reports. This review indicates that during these years, these boilers have always burned more than 90 percent BFG.<sup>76</sup>

Finally, in actual practice, it should be understood that the provisions of the Boiler NESHAP are directly applicable to US Steel. In the event that the relevant conditions of the revised permit could be construed or interpreted to require something less than or contrary to what is required by the NESHAP rules for boilers, this was inadvertent and was not intended by the Illinois EPA. Accordingly, such provisions of the revised CAAPP permit and the associated interpretation would be material mistakes in the permit and would not act to shield US Steel from applicable regulatory requirements.

50. The planned revised CAAPP permit could accommodate the possibility that Boilers #11 and #12 are not subject to the Boiler NESHAP, without sacrificing enforceability, by requiring US Steel to demonstrate compliance with the exemption in 40 CFR 63.7491(k) in the event that it alters the fuel mix for Boilers #11 and #12 and seeks to avoid applicability of the NESHAP rules.

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<sup>73</sup> It is also noteworthy that the Boiler NESHAP provides that certain boilers, including BFG fired boilers, are not subject to these rules, not just exempt from the emission standards and related requirements in these rules.

<sup>74</sup> The NESHAP rules, 40 CFR 63.9(b)(2) and 63.7545(b), specifically provide that sources that are or may be subject to these rules must submit Initial Compliance Notifications in which they must set forth the status or classification of their various emission units relative to these rules.

<sup>75</sup> As defined by 40 CFR 63.7575, "Blast furnace gas fuel-fired boiler or process heater means an industrial/commercial/institutional boiler or process heater that receives 90 percent or more of its total annual gas volume from blast furnace gas."

<sup>76</sup> Based on the new information US Steel has submitted, it would clearly be improper for the Illinois EPA to presume in the revised permit that Boilers #11 and #12 will be subject to NESHAP. More importantly, it not necessary for the revised permit to make any presumption about the status of Boilers #11 and #12, as both possibilities may be addressed in the revised permit.

**Response:** Effectively, this is exactly what US Steel must show in the Initial Compliance Notification required by the Boiler NESHAP. Condition 5.10.7 of the revised CAAPP permit requires US Steel to timely submit this notification, with compliance information as required by the Boiler NESHAP, 40 CFR 63.9(b)(2) for emission units that are subject and potentially subject to the Boiler NESHAP.

51. Are the specifics of the boiler NESHAP absent from the planned revised CAAPP permit because the compliance date of this NESHAP for existing emission units is three years out? If so, the revised permit should require US Steel to submit an application for a modified permit by the compliance date wherein US Steel describes how it intends on complying with this NESHAP. This permit should also require initial testing within 180 days of compliance in accordance with 40 CFR 63.7510(e)

**Response:** The "specifics" of the boiler NESHAP are not absent from the revised permit, as suggested by this comment. They have been addressed in the permit for all subject emission units and potentially subject units, i.e., Boilers #11 and #12. In particular, for Boilers # 11 and #12, the NESHAP standards for existing boilers in the Gas 2 category are set forth in the permit in the event that either of these boilers are subject to these standards (See Condition 7.10.3(b)(ii)). The revised permit also addresses the initial emission testing that would be required for Boilers #11 and #12 in the event that they are subject to the NESHAP (See Condition 7.10.7-2.) (In fact, Boilers #11 and #12 are the only emission units for which such testing might be required, as other subject units will be fired with natural gas.) However, as already discussed above in response to other comments, US Steel has submitted additional information showing that these boilers will likely not be subject to the boiler NESHAP as they will qualify as BFG fired units.

It is correct that in preparing the planned revised CAAPP permit, the Illinois EPA took into consideration the future compliance date of the NESHAP rules for existing units, three year after the effective date of the adopted rules.<sup>77</sup> However, the result of this consideration was the approach taken in the revised CAAPP permit, which addresses the two possibilities for Boilers #11 and #12 under the NESHAP, one in which they are subject to the standards of Boiler NESHAP and one in which they are not. As the permit addresses both these possibilities, the permit should not need to be modified to further address the Boiler NESHAP.<sup>78</sup>

52. New requirements are contained in the planned revised CAAPP permit based upon Illinois EPA's interpretation of the Boiler NESHAP, as released by USEPA prior to the comment period and subsequently published in the Federal Register. When the Boiler NESHAP was published in the Federal Register, USEPA also announced that is considering petitions for reconsideration and may agree to a stay of reconsidered provisions.

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<sup>77</sup> Under Section 112 of the Clean Air Act, new NESHAP rules usually provide sources with three years before the newly adopted standards apply to existing emission units. This gives source the necessary time to evaluate how it will comply with the new rules and to complete the necessary steps for compliance, especially new any air pollution control equipment must be design and constructed for compliance.

<sup>78</sup> As the effective date of the adoption of the NESHAP rules for boilers will be May 20, 2011, the compliance date of these rules for existing sources will be May 20, 2014, three year after the date of adoption. This is less than four months before September 3, 2014, when the revised CAAPP permit will expire.

Response: These new requirements are included in the CAAPP permit as a result of the direct application of the recently adopted Boiler NESHAP, not based on Illinois EPA's interpretation of these rules. The Illinois EPA included relevant requirements of these rules for subject and potentially subject emission units at the source based on information describing those units submitted by US Steel in its CAAPP application and in relevant applications for construction permits. While the USEPA has announced in the Federal Register that certain aspects of these rules that will be the subject of "reconsideration" or further consideration by USEPA, at this time, the provisions of these rules that are of concern to this commenter are not the subject of reconsideration. The provisions of the NESHAP rules in the revised CAAPP permit constitute applicable requirements that must be addressed in the permit.<sup>79</sup>

53. Condition 5.3.9 would require that an Energy Assessment be performed pursuant to the Boiler NESHAP. However, these rules are new and the scope of the "energy assessment" required by these rules and its impacts for subject sources are not clear at this time.

Response: The applicability of the requirement to perform an energy assessment is straightforward. US Steel has emission units that will be subject to this NESHAP, i.e., galvanizing line process heaters. Therefore an energy assessment is required by the adopted NESHAP rules. US Steel does not dispute applicability of this rule as they are a major source of HAPs and operate certain subject units. The requirements for energy assessments are not part of the reconsideration of these rules announced by USEPA. Accordingly, this element of these rules, as adopted, has been appropriately applied to the source at the time of issuance of this revised permit and no changes have been made in response to the comment.

54. Condition 5.10.7 would require a Notification of Compliance pursuant to the Boiler NESHAP. However, these rules are new and the scope of this requirement and its impacts are not clear at this time.

Response: The applicability of the requirement to submit a notification of compliance is also straightforward. US Steel has emission units that are clearly subject to this NESHAP. Therefore a notification of compliance must be submitted. This requirement of the NESHAP rules is not a subject of USEPA's ongoing reconsideration of these rules. This requirement of the rules, as promulgated, has been appropriately applied to US Steel at the time of issuance of this revised permit. As such, no changes have been made in response to the comment.

55. Condition 7.8.5-2 would require certain work practices pursuant to the Boiler NESHAP for certain subject emission units in the Galvanizing Lines. However, these rules are new and the scope of the required Work Practices and the associated impacts are not clear at this time.

Response: The applicable requirements for the galvanizing line process heaters were based on the information describing these heaters provided by US Steel in its CAAPP application. Applicability of work practices is based on the type of fuel fired in the emission units and the size. This information was available in application material, as discussed above.

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<sup>79</sup> As the compliance date for existing units under the Boiler NESHAP is several years in the future, it is also possible that the CAAPP permit could be modified to accommodate any changes to the Boiler NESHAP that might be adopted by USEPA that affect the requirements for subject units at this source.

Further, US Steel has not disputed that these are "Gas 1 units burning Natural Gas," some with rated heat inputs less than 10 mmBtu and some with inputs of 10 mmBtu or more. Applicable requirements for subject units in the Gas 1 category are not part of the USEPA's reconsideration of this NESHAP.<sup>80</sup> As such, for these heaters, in the revised permit, the relevant requirements of these rules, as adopted, have been appropriately applied and no changes have been made in response to this comment.

### Title I Conditions

56. USEPA granted ABC's Petition on the ground that the requirements in several Title I New Source Review permits were not incorporated in the initial CAAPP permit. USEPA Order at 3-5. Specifically, the Administrator stated:

I ... direct Illinois EPA to include the requirements for the emission reduction credits in the USS CAAPP permit, as well as all other requirements of the pre-construction permits cited by Petitioner at pages 6 and 9 of the petition.  
USEPA Order at 5.

The pre-construction permits cited at pages 6 and 9 of the petition, and expressly noted by the Administrator in her Order, include Permit 06070020 - Coke Plant Permit issued March 13, 2008 to Gateway Energy & Coke Company, c/o SunCoke Company (Coke Plant Permit). USEPA Order at 3, Footnote 1.

Illinois EPA did not comply with USEPA's Order with respect to the Coke Plant Permit. The requirements in that permit are not included in the planned revised CAAPP permit. In the Statement of Basis, Illinois EPA says only that the new coke plant built by Gateway Energy & Coke at the US Steel site "will be the subject of a separate CAAPP Permit issued to Gateway and will not be described further in this document." Statement of Basis at 5. Because the new coke plant is owned and operated by a company independent from US Steel, Illinois EPA presumably wants to issue a CAAPP permit governing the coke plant to its owner-operator, Gateway Energy & Coke Company. However, Illinois EPA gives no indication as to when that CAAPP permit might be issued. In that Illinois EPA took 13 years to issue the initial CAAPP permit for the US Steel facility, there is reason to be concerned about the timeliness of the issuance of the CAAPP permit to Gateway.

In issuing the construction permit for the Gateway plant, the Illinois EPA allowed Gateway to use emission reductions at the US Steel facility to net out of New Source Review for significant emissions associated with the coke plant. In order to do so, Illinois EPA concluded that Gateway and US Steel were a "single source." The planned revised CAAPP permit (Condition 5.1.7) states that "[f]or purposes of the CAAPP, U.S. Steel is considered a single source with Gateway Energy & Coke Co LLC." Illinois EPA identifies five other companies whose operations are considered a "single source" with US Steel for purposes of the CAAPP. Conditions 5.1.2 - 5.1.6. Illinois EPA issued CAAPP permits for all five of those companies at the same time as it issued the initial CAAPP permit for US Steel. The Gateway plant has been in operation for over a year now.

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<sup>80</sup> Rather, the Gas 2 category is being reconsidered to further examine whether certain Gas 2 fuels could be reclassified as being in the Gas 1 category.

Illinois EPA knew that it was going to have to add the Title I conditions to a revised CAAPP permit for US Steel. Yet no explanation is given as to why the Gateway CAAPP permit is not being issued, or even when it will be issued. It is distressing that Illinois EPA was so willing to accommodate US Steel and Gateway to allow two large, independent companies to be considered a single source for purposes of New Source Review permitting requirements, avoiding certain emission control requirements on the new coke plant, yet it is far less eager to protect the public by issuing a CAAPP permit for the new coke plant. I urge Illinois EPA to issue for public comment a draft CAAPP permit for the Gateway plant within 60 days.

**Response:** The Illinois EPA has fully complied with the Administrator's Order as it relates to this issue. The Order specifically addressed whether certain preconstruction permits contained applicable requirements that were "part of the source that is covered by the title V operating permit under review in this action." Consequently, the Illinois EPA's action in this proceeding only addresses construction permits that relate to US Steel's CAAPP permit. The CAAPP permit that will eventually issue to Gateway will contain applicable requirements relative to that facility and need not be addressed in this permitting action for US Steel.

The confusion shown by this comment is possibly due to the nuances of "single source" permitting under the PSD and Title V permitting programs. In this particular context, permit authorities possess latitude in tailoring the permitting obligations for those facilities that are deemed a single source for purposes of Title V.<sup>81</sup> In fact, USEPA guidance has recommended the approach that has historically been practiced by the Illinois EPA.<sup>82</sup> The Illinois EPA issues separate CAAPP permits for each facility that is combined (or aggregated) in a single source determination, with a different responsible official recognized for each facility and each facility accorded a set of compliance/certification obligations from its own permit document. Accordingly, Gateway will be issued a CAAPP permit in a separate proceeding from the revised CAAPP permit being issued to US Steel in this action.

At the time of the original CAAPP permit action involving US Steel and the other facilities referenced by this comment, the Illinois EPA addressed the permitting requirements for those facilities that comprised US Steel's Granite City Works then in existence. It was always expected that the Gateway facility, being subject to the separate application filing requirements for a new CAAPP source, would be permitted under the CAAPP at a later date. While the Illinois EPA cannot make commitments about the timing for the processing of the CAAPP permit application for the Gateway facility, the request in this comment for expedited processing of this CAAPP application is noted.

#### Incorporations by Reference

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<sup>81</sup> See, Letter, dated November 25, 1997, from Steven Riva, Chief, Permitting Section, Air Programs Branch, Region 2, to Michael Rodburg, Esq., concerning Dupont and Dupont Dow Elastomers (observing that permit authorities retain the discretion to issue separate Title V permits for facilities that constitute a single source).

<sup>82</sup> See, Letter, dated July 15, 1997, from Cheryl Newton, Chief, Permits and Grants Section, Region V, to Robert Hodanbosi, Chief, Division of Air Pollution Control, Ohio EPA, concerning LTV Steel; Letter, dated November 27, 1996, from Matt Haber, Chief, Permits Office, Region IX, to Jennifer Schlosstein, concerning Simpson Paper Company.

57. USEPA granted ABC's Petition with respect to five plans that were inadequately incorporated by reference in the initial CAAPP permit. USEPA explained that the incorporation by reference provisions did not comply with federal law because each of the provisions "did not refer to a specific version of the plan nor did it provide sufficient descriptive information about the approved plan or its requirements." USEPA Order at 43. USEPA explained that, among other things that the manner in which any referenced material applies to a facility is clear and is not reasonably subject to misinterpretation." Id. The planned revised CAAPP permit provides dates and some other information regarding the identity of the plans, but it fails to describe their contents or to provide sufficient detail to explain how the plans apply to US Steel. For example, the only information regarding the content of the Fugitive Particulate Matter Operating Program is that it "address[es] the control of fugitive particulate matter emissions from all plant roadways, including the iron-making and steel-making roads, storage piles, access areas near storage piles, and other subject operations located at the facility..." Condition 5.3.2(d). This description provides no information about how the plan addresses fugitive particulate matter emissions. It provides no information about the nature of US Steel's obligations under the plan. It is by no means "detailed enough that the manner in which any referenced material applies to a facility is clear and is not reasonably subject to misinterpretation." USEPA Order at 43. The same defects characterize the planned revised CAAPP permit's provisions regarding the PMIO Contingency Measure Plan, Condition 5.3.3(d), and the Episode Action Plan, Condition 5.3.7(d). Given the persistent issues regarding particulate matter emissions, fugitive and otherwise, from US Steel, the failure of the planned revised CAAPP permit to include meaningful information regarding the Fugitive Particulate Matter Plan and the PMIO Contingency Measure Plan is of particular concern. The work practice plan provisions of the planned revised CAAPP permit are improved from the initial CAAPP permit inasmuch as they include the information that US Steel has submitted a plan and the date on which it was submitted. Condition 7.2.5-1(e). Beyond that, however, the rest of the work practice plan provision (Condition 7.2.5-1) is nothing more than a recitation of what the applicable regulations require of such plans. The provision contains no information regarding the actual content of US Steel's plan.

**Response: The Illinois EPA must disagree with this comment. The planned revised CAAPP permit includes specific details identifying the date and title of the incorporated documents. In doing so, the CAAPP permit should remove any possibility that someone might be confused as to which plan/program, or version thereof, is being incorporated by reference into the permit. In addition, the subject permit conditions describe the general manner in which the identified plan/program applies to US Steel and the reasons (or origin of authority) as to why US Steel is subject to the plan/program. Lastly, each plan/program incorporated into the CAAPP permit was copied and placed in the public repository for viewing during the comment period, or was otherwise available upon request from the Illinois EPA.**

The criteria that USEPA emphasized in its Order are fairly straightforward and were discussed in the Statement of Basis. A permit authority must ensure that: "(1) referenced documents be specifically identified; (2) descriptive information such as the title or number of the document and the date of the document be included so that there is no ambiguity as to which version of the document is being referenced; and (3) citations,

cross references, and incorporations by reference are detailed enough that the manner in which any referenced material applies to a facility is clear and is not reasonably subject to misinterpretation."<sup>83</sup> Based on any objective reading of the affected permit conditions, these basic requirements have been met here. It is noteworthy that this comment does not offer any kind of detailed assertion, credible or otherwise, demonstrating that the manner in which the plans/programs have been incorporated in the revised CAAPP permit results in confusion or ambiguity.

At the heart of this comment may be the desire to view, in part or in whole, the actual contents of the plans/programs in the CAAPP permit itself. As discussed in the Statement of Basis, requiring that the contents of such plans/programs be restated in a CAAPP permit would be redundant, essentially defeating the objective of streamlining permit development. It would also be inconsistent with USEPA's historical treatment of this issue.<sup>84</sup> Even attempting to discern some level of demarcation between plan/program contents would prove unworkable, inviting such subjectivity and minutia into the preparation of Title V permits as to make it impossible for permit authorities to gauge their adherence to a clear, measurable standard. Accordingly, the Illinois EPA believes that the revised CAAPP permit adequately comports with the Order regarding the incorporation by reference of plans and programs.

#### COMMENTS ON SPECIFIC PERMIT CONDITIONS WITH RESPONSES

58. In Section 4.0, the COG flare is included in the description of the COG Desulfurization System. This could incorrectly be interpreted to mean that the thermal oxidizer in the Desulfurization System controls emissions from the flare. The COG flare is separate and distinct from the COG Desulfurization System.

**Response:** In the revised permit issued by the Illinois EPA, Table 4 has been clarified to show that the COG flare is not part of the COG Desulfurization. Rather it is part of a separate and distinct system for fuel COG, which also includes the COG holding tank.<sup>85</sup>

59. Condition 5.8(b) would require US Steel to begin conducting observations for the presence of fugitive emission at the property line of the source to address compliance with 35 IAC 212.301 within one day of receipt a request from the Illinois EPA. This is insufficient lead time to conduct such observations if the request is received on a Friday (or Saturday.)

**Response:** The Illinois EPA has further considered this requirement in response to this comment. The revised CAAPP permit issued by the Illinois EPA requires that observations for visible emissions begin within three days if US Steel elects to have these observations conducted by a people other than its own employees. This is US Steel's current practice for

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<sup>83</sup> See, Petition Response at page 43, citing *White Paper 2* at page 37.

<sup>84</sup> In its petition responses, USEPA has conspicuously refrained from mandating that permit authorities restate the contents of incorporated plans/programs in Title V permits, in contrast to its more rigorous standard for incorporating the terms and conditions of prior permits.

<sup>85</sup> The table in Section 4.0 provides only very basic information on the operations at the source. The linkage between specific emission units/operations and associated control equipment is provided in the Unit-Specific Provisions in Chapter 7 of the permit.

required observations for visible emissions and opacity and US Steel could elect to follow this practice for these observations as well. As this practice facilitates independent observations, the permit accommodates this practice by providing a reasonable amount of time, three days from the receipt of request, for US Steel to make the necessary arrangements for a third-party to conduct these observations.

On the other hand, if US Steel elects to have these observation made by its own employees, the observations will be required to begin within one day of receipt of a request. This is because arrangement will not need to be made for a third-party observer. The mill operates seven days per week including holidays, with staff present at all times. If the required observations will be made by employees of US Steel, there should be employees at the mill who can begin making these observations within one day of a request from the Illinois EPA

60. Conditions 5.9.1(d) and (e) would add new requirements to the CAAPP permit for recordkeeping related to opacity and emission limits for conditions that are not current applicable requirements. However, the authority to impose such conditions is not identified.

**Response:** The origin of authority for these new requirements is Section 39.5(7)(b) of the Act", as identified in the first paragraph of Condition 5.9.1. As the origin of authority for these conditions is clearly identified, no change was made to the permit.

Incidentally, these new recordkeeping requirements would be part of the enhancements made to the CAAPP permit to provide Periodic Monitoring for various production and emission limits in Conditions 5.6.2(a) and (b).

61. Condition 5.9.3(c) would require US Steel to keep a copy of "the" Episode Action Plan," as incorporated by reference in Condition 5.3.7; as are any amendments and revisions. However, the condition does not specify that a copy of any revised or amended Plan needs to be maintained, as is required for other plans incorporated by reference.

**Response:** Changes have been made in Condition 5.9.3 to address the records of the most current version of the Episode Action Plan incorporated by reference in Condition 5.3.7. Records of the most current version of the Episode Action Plan would verify that the Permittee is ready to follow this plan and ensure that this plan is up to date.

62. Condition 5.12(f) should indicate that SO<sub>2</sub> emissions should be determined for the coke oven gas (COG) that is being burned. This condition is a carryover from the prior permit, which was issued before the COG Desulfurization System COG was installed. US Steel has since installed this system, which typically treats COG (unless the system is down for maintenance as authorized by the construction permit) before being burned. To measure un-desulfurized COG when desulfurized gas is being burned to determine SO<sub>2</sub> emissions from combustion is inappropriate and meaningless.

**Response:** The planned revised CAAPP permit expected that SO<sub>2</sub> emissions from use of COG would be appropriately determined considering whether desulfurized or undesulfurized COG was being combusted. (See Condition 5.12(k).) This is further clarified in the revised permit that has been issued.

However, the fact that COG is now routinely treated by the COG Desulfurization System does not eliminate the need to collect data for the sulfur content of undesulfurized COG when the Desulfurization System is operating, as suggested by this comment. This is because the sulfur content of undesulfurized COG is limited to 500 grains of H<sub>2</sub>S per 100 SCF by Construction Permit 06070022. (See Condition 7.3.7(d)(i) of the revised CAAPP permit.) However, the revised CAAPP permit would appropriately account for the installation of the Desulfurization System as it sets a less rigorous data collection requirement for the H<sub>2</sub>S content of undesulfurized COG when COG is being treated. (See Condition 7.3.9(f)(iv)(A) and (B).)

63. Condition 7.1.8(a), which establishes inspection requirements for material handling and processing operations, would require US Steel to observe virtually all material handling operation control measures for every material. This requirement is overly burdensome and duplicative as observations of material handling operation control measures for every material handled is virtually unlimited and the emissions from the materials are not expected to change much on a material basis.

**Response:** It was not intended that inspections be performed for each distinct material handled by the source, e.g., each individual alloying material for steel making from a different supplied handled. Rather, it was intended that the required inspection be conducted for the various categories of material that are handled, e.g., alloying materials, to confirm the proper handling of that category of material. This has been clarified in the issued permit.

64. Condition 7.2.3-1(a) refers to applicable procedures. What are the applicable procedures?

**Response:** The applicable procedures are the procedures set out in Condition 7.2.12 that apply to coke oven charging. Condition 7.2.12 contains various procedures that US Steel must follow when demonstrating compliance with 35 IAC 212.443, including procedures pertaining to coke oven battery charging, pushing, doors, ports/lids, offtakes and quenching. The reason for these procedures being separately identified is because there are multiple procedures that overlap and derive not only from state rules, but also from Consent Orders and federal rules as well. In addition, the procedures for Battery A are not always identical to those for Battery B. Condition 7.2.12 sets out the details of these procedures for the various requirement and battery without obscuring the actual emission standards in 35 IAC 212.443, as provided in earlier conditions in Section 7.2 of the permit.

65. For the combustion stacks on the coke oven batteries, Condition 7.2.7-3(b)(iii) would require testing for emissions of VOM, CO and NO<sub>x</sub> if the monthly or annual natural gas usage limit is exceeded. US Steel believes that triggering additional testing because of an isolated event which could cause additional monthly natural gas usage is inappropriate since the source does not emit significant amounts of these other pollutants, e.g., VOM is less than 0.34 tons per year.

**Response:** No changes have been made. Monthly and annual supplementary natural gas usage limits along with emission limits associated with burning of natural gas have been established in the construction permit

04110018 and Condition 7.2.6( c)(i) and ( c)(ii) of the proposed CAAPP. Allowable monthly natural gas usage established in Condition 7.2.6( c)(1) is not evenly spread through a calendar year and constitutes one sixth of the allowable annual usage which gives the source all needed flexibility to increase natural gas usage in any given month. It is hard to imagine any "isolated event" with a duration lasting more than 60 days, when the COG will not be available for coke ovens and natural gas will substitute it.

66. The requirement in Condition 7.2.8-2(k), to observe opacity of emissions from the mobile scrubber that control pushing on a monthly basis, is onerous and unnecessary. The relevant NESHAP, 40 CFR 63 Subpart CCCC, does not require such observations. The NESHAP relies on monitoring of operating parameters for the scrubber to address proper operation. This operational monitoring would also address 35 IAC 212.443(c)(1)(A), which limits opacity to 20 percent. Therefore, a more appropriate frequency for such observations would be quarterly.

**Response:** No changes have been made. The relevant NESHAP does not establish any opacity standards for venturi scrubber. As a result, no opacity observations are required. At the same time, 35 IAC 212.443(c)(2)(B) (Condition 7.2.3-5(b)(ii)), requires that opacity shall not exceed 20 percent from control device during pushing . The Act gives Illinois EPA authority to impose all needed conditions in the CAAPP to ensure compliance with the applicable limits. Considering the nature of coke pushing operations and the importance from the environmental standpoint of a constant monitoring of this opacity standard, Illinois EPA exercises the authority given by the Act and the federal statutes in "gap filling" and establishing all necessary frequencies of opacity observations for a mobile venturi scrubber. Illinois EPA believes that monthly opacity observations are reasonable to ensure constant compliance demonstration with applicable opacity standard.

67. Condition 7.2.10(a) would require US Steel to submit quarterly reports for "excess opacity" readings for the combustion stacks of both batteries, while the current applicable requirement only mandates such reports for Battery B.

**Response:** This comment correctly observes that this condition imposes a new requirement for Battery A. That is, the submittal of quarterly excess opacity reports are required for the combustion stack of Battery A relative to 35 IAC 212.443(g), which limits opacity to 30 percent. However, the required timing of these reports for Battery A, which in fact constitute reports for deviations that are required by Section 39.5(7)(f)(ii) of the Act, is appropriate. Since similar reports must be prepared and submitted for Battery B, it is also reasonable to require such reports to be prepared and submitted for Battery A.

68. For the COG Desulfurization System, Condition 7.3.3(g) incorrectly states that SO<sub>2</sub> emissions of the thermal oxidizer in the COG Desulfurization System are subject to 35 IAC 214.301. This is not correct because 35 IAC 214.302 provides that 35 IAC 214.301 does not apply "...to processes designed to remove sulfur compounds from the flue gases of fuel combustion emission sources."

**Response:** The revised CAAPP permit issued by the Illinois EPA corrects the error identified in this comment. (See Condition 7.3.4(e), which

indicates that the COG Desulfurization System, including the thermal oxidizer,<sup>86</sup>(1) is not subject to 35 IAC 214.301.) This system qualifies for 35 IAC 214.302 because its purpose and function is to reduce emissions of SO<sub>2</sub> from various emission units at this source that are fired with COG. It does this by processing COG to remove sulfur, thereby reducing emissions of SO<sub>2</sub> when the COG is subsequently used as fuel.<sup>87</sup> In addition, COG is used at this source in fuel combustion emission sources, i.e., the two older boilers, as well as in various process emission sources.

69. Now that the source has a COG Desulfurization System, the H<sub>2</sub>S content of COG exiting from the by-products plant does not need to be monitored before the COG enters the Desulfurization System, except when the Desulfurization System is not operating. Condition 7.3.9(f) needs to reflect that COG measurement of COG exiting the by-products plant is necessary only when the Desulfurization System is not operating. The condition should require also that US Steel maintain a system, rather than systems, to measure H<sub>2</sub>S.

**Response:** As already explained in response to a comment on Condition, 5.12(f), data for the sulfur content of undesulfurized COG is still required when the Desulfurization System is operating. This is because Construction Permit 06070022 limits the sulfur content of undesulfurized COG to 500 grains of H<sub>2</sub>S per 100 SCF. However, the revised CAAPP permit would appropriately account for the Desulfurization System as the permit deals with the data collection requirement for the H<sub>2</sub>S content of undesulfurized COG when COG is being treated by this system.

70. Where is Condition 7.3.10(a)(i) from the original CAAPP permit? That condition would have required monitoring of the COG Flare to show compliance with various requirements for flares in 40 CFR 60.18.

**Response:** When preparing the planned revised CAAPP Permit in response to USEPA's Order, it was realized that this condition in the original CAAPP permit had incorrectly applied the requirements of 40 CFR 60.18 to the COG Flare.<sup>88</sup> This error is being corrected. 40 CFR 60.18 is not applicable to the COG because this Flare is not a control device for the coke by-product recovery plant. Rather the COG Flare is used for disposal of COG when the amount of COG being produced exceeds the fuel needs of the plant at a particular time.

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<sup>86</sup> The thermal oxidizer is the point at which 35 IAC 214.301 would potentially apply to the COG Desulfurization System, as it is the point at which tail gas from the system is released. The thermal oxidizer is an essential part of the COG Desulfurization System as it converts H<sub>2</sub>S in the tail gas to SO<sub>2</sub>.

<sup>87</sup> It should be noted that neither 35 IAC 214.301 nor 214.302 are applicable to similar fuel gas desulfurization processes at the petroleum refinery in Roxana operated by ConocoPhillips. Those processes at that refinery are subject to 35 IAC 214.382(b), which provides that "No person shall cause or allow the emissions of more than 1,000 ppm of sulfur dioxide into the atmosphere from any process emission source in the St. Louis (Illinois) major metropolitan area designed to remove sulfur compounds from the flue gases of petroleum and petrochemical processes."

<sup>88</sup> The imposition of Periodic Monitoring for an applicable requirement presumes that such requirement is being properly applied. In this case, the further evaluation of Periodic Monitoring for the original Condition 7.3.10(a) revealed that the requirements in this condition had been improperly imposed on the COG.

71. Condition 7.4.8(h) incorrectly identifies current parametric ranges and damper positions for the current configuration and operation of the casthouse baghouse and iron spout baghouse.

**Response:** The values for operating parameter limits in Condition 7.4.8(h) reflect the values established by emission testing in September 2009 and January 2010, as reported to the Illinois EPA by US Steel. However, in response to this comment, the issued permit more clearly indicates the limits that apply to each of the modes of operation of the casthouse, i.e., "one-furnace" operation and "two-furnace" operation.

72. Condition 7.5.5-3(A), (B) and (C), which address work practices for the BOF furnaces should reflect that they are subject to change, and would be superseded, pursuant to additional controls that are currently being developed pursuant to the Memorandum of Understanding between US Steel and the Illinois EPA. The conditions in the existing construction permits may become inappropriate if not impossible when the additional controls are in place.

**Response:** This comment does not justify the change to the revised CAAPP permit that is requested. It is not necessary for the revised CAAPP permit to anticipate future changes to the current work practices for control of emissions from the BOF furnaces, as specified by Condition 7.5.5-3. While it is possible that certain of these work practices may cease to be appropriate in the future, when additional control equipment is added for the BOF furnaces pursuant to the Memorandum of Understanding, it is not necessary for the revised CAAPP permit to presume that this will be the case and address these potential changes. Any changes to the future work practices for the BOF furnaces may be considered in conjunction with improvements to the air pollution control equipment for the furnaces.

73. What is the frequency of the emissions testing for the BOF required by Condition 7.5.7(b)?

**Response:** The frequency for the required testing is that of the Steel NESHAP, which is no less than twice per permit term for the BOF furnaces, which are controlled by an ESP, and no less frequently than every 60 months for other units in the BOF shop, which are controlled by baghouses. This is because Condition 7.5.7(b) states that the required testing is to be conducted ".....in conjunction with the testing ..... by the NESHAP (Condition 7.5.7(a))."

74. Condition 7.5.8(e)(i)(C)(4), which deals with the timing of observations of opacity of uncaptured emissions from the BOF shop, is ambiguous and vague. It requires increased observations if "any of the five previous observations" measured opacity of 18 percent or more. To require increased monitoring if any of the 15-second intervals exceed 18 percent is overly burdensome and inappropriate. US Steel requests that the condition reflect that the "observations" referenced in this condition are based upon a 3-minute average, not individual observation.

**Response:** The requested clarification was made.

75. Condition 7.6.7(a) does not provide a frequency of opacity observations for the continuous casting operations.

**Response:** The revised CAAPP permit issued by the Illinois EPA requires these observations to be conducted on a semi-annual basis. This is appropriate for continuous casting. By their design, the continuous casters minimize exposure of molten steel to the atmosphere and so also minimizes PM emissions. For example, molten steel is fed into the casters with ladles with ports on the bottom of the ladles. Access to the molten metal is not needed during casting, so the process is closely shrouded. As a consequence, the continuous casting operations do not normally exhibit any visible emissions. Accordingly, mandatory semi-annual observations are sufficient to assure compliance with the applicable opacity standards. Observations would also be required on a monthly basis for the presence of visible emissions from the casters, with follow up observations for opacity if visible emissions are present (See Condition 7.6.8(a)(ii)). These monthly observations would provide the routine verification of the condition of the casters and proper operation,

76. I do not understand why requirements from Permit 72080038, which were originally in Condition 7.7.7, are now obsolete. Although this is discussed in Footnote 12 of the Statement of Basis. I was not able to follow what the Statement of Basis says about the limits, which seem to concern the firing of COG. The premise of the discussion is that the rules are obsolete, but for COG Footnote 12 talks about the limits being "flawed". Since flawed is not the same as obsolete or non-applicable, does this mean that Illinois EPA needs to revise these limits as opposed to removing them altogether? If Illinois EPA is questioning the relevance of these limits to the PM standard that is cited, is it saying that this PM standard is no longer applicable to this reheat furnace? Or is it saying the limits need to be fixed. Furthermore the footnote is hard to follow is that it starts off by talking about COG emissions, then talks about fuel oil-based limits, then switches back to COG.

**Response:** As explained in the Statement of Basis, the subject requirement was both obsolete and flawed.<sup>89</sup> It was also established in a State Operating Permit for other than Title I purposes. The requirement was obsolete because it addressed considered firing of oil in reheat furnaces, a mode of operation that would not be allowed by the CAAPP permit (See Condition 7.7.6(b)). The requirement was flawed because it did not directly address compliance with the relevant standard, 35 IAC 212.322, the process weight rule for existing emission units. It was also flawed because it based on an incorrect application of the process weight rule. The requirement cannot be corrected because it was based on a flawed application of the rule. In addition, the revised CAAPP permit directly addresses PM emissions from use of COG in the reheat furnaces. Most significantly, the revised permit requires sampling and analysis of COG for its PM content on an annual basis (Condition 7.3.9(h)).

77. Condition 7.7.10(b) would require US Steel to maintain records of fuel being fired in each of the slab reheat furnaces on an hourly basis. This is onerous and unnecessary.

**Response:** In response to this comment, the wording of Condition 7.7.10(b) has been clarified in the issued permit to better express the intent. This condition is intended to require US Steel to keep records that would

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<sup>89</sup> The confusion of the commenter may in part be due to the fact that the word "not" was missing one of the sentences in the discussion. In particular, the subject condition in Permit 72080038 did not restrict the PM emission rate from firing COG.

identify the fuel used in each reheat furnace during each hour of operation or, for Reheat Furnace 4, the mix of fuels used in each hour. It is reasonable that US Steel keep this information as the fuel used in a reheat furnace may affect its potential for emissions. However, this does not require that US Steel keep records on an hour-by-hour basis. For example, if a reheat furnace fired COG for an entire month, the relevant record would merely need to indicate that only COG was fired in that month. The relevant records would also only need to indicate when the fuel used in the furnace was switched. The language of this condition in the issued permit is intended to separate the necessary content of the records from the manner in which the records are maintained.

78. In Section 7.10 of the permit, where did the requirements from 35 IAC 212.458(b)(22) go for the boilers?

**Response:** 35 IAC 212.458(b)(22) is not included in the revised permit because the boilers that it applied to no longer exist. This standard addressed the "steelmaking boilers," which have been demolished. The operating permit for the steelworks boilers, Permit 73031480, was withdrawn in January 1993. These boilers were located in the steelmaking area of the source, rather than in the vicinity of the blast furnaces, where "iron making" occurs.

79. What is the origin of the note that accompanies the emission limits in Condition 7.11.6? Condition 7.11.6 is a T1 Condition that sets forth emission limits for the emergency engine from Construction 00060003.

**Response:** This note, which indicates that during startup emissions may be 10 percent higher than the identified limits, is a feature of the original emission limits, as established by the construction permit.

80. Condition 7.11.8(b) would require Method 9 observation on an emergency engine that is rarely used. In the recent past, the engine has only been started for purposes of operational testing and not operated for to supply power during emergencies. Requiring annual observations of an emergency engine that is typically only started to test is inappropriate.

**Response:** While this engine is rarely used for emergency purposes, it is routinely operated, admittedly for very short periods of time, to confirm availability for emergencies. In these circumstances, it is appropriate that on annual basis that at least one of these operability tests, which are normally schedule monthly, include opacity observations. This is in part because the source conducts routine opacity observations for other operations at the facility so that observations at this engine should be able to conducted with a minor amount of additional effort. However, in response to this comment, the issued permit would provide that the routine reliability test of the engine need not be extended to conduct the required opacity observation. This will avoid having to operate the engine solely for the purpose of conducting opacity observations.

81. Why is 35 IAC 219.301 now considered non-applicable to the gasoline storage and dispensing operations in Section 7.12 of the permit? The permit says that the tanks no longer handle organic material. There is no limitation to that effect and it seems that gasoline is an organic material.

Response: When preparing the planned revised CAAPP Permit in response to USEPA's Order, it was realized that the original permit had incorrectly applied 35 IAC 219.301 to the gasoline storage tanks and dispensing operations at this source. This error is being corrected. These operations "store and handle" organic material rather than "use" organic material. As such, 35 IAC 219.301 is not applicable to them. Instead, these operation are regulated by 35 IAC Part 219 Subpart B, Organic Material from Storage and Loading Operations, and, as gasoline is handled, by 35 IAC Part 219, Subpart Y, Gasoline Distribution. In the revised CAAPP permit, the relevant requirements of these rules are applied to the gasoline storage and dispensing operations at the source.

35 IAC 219.301, Use of Organic Material<sup>90</sup> (commonly referred to as the 8 pound per hour rule) applies to units such as coating operations, chemical processes, and cleaning operations. In such units, organic materials or materials containing organic materials are part of the coatings, solvents, raw materials, cleaning agents, etc. involved in the process. The organic material is released and emitted due to the use of such materials in the unit. For example, degreasers commonly use organic cleaning solvent to remove oil and dirt from parts prior to painting and the this organic solvent may be emitted from the process. Emissions may be controlled by a variety of techniques, including the selection of cleaning solvent, measures to prevent loss of solvent and use of add-on control equipment.

Incidentally, Condition 7.12.4 in the planned revised CAAPP permit does not state that the subject operations "no longer handle" organic material. It actually states that the tanks " ... do not use organic material."<sup>91</sup> As discussed, there is a difference between "use" and "handle" in the context of 35 IAC 219.301.

82. Condition 7.13.7(a)(ii) would require that all active coal storage piles to be observed on a monthly basis. This requirement is onerous and is essentially infeasible to implement because the use of storage piles may change on a day to day basis. A more feasible method of obtaining the appropriate periodic monitoring is necessary.

Response: Condition 7.13.7(a) was not intended to require storage piles to be inspected each time that material is added to or removed from a pile, as suggested by this comment. This condition is intended to require that each storage pile or "storage pile location" be inspected on at least a monthly basis, as it exists at the time of the inspection. This has been clarified in the issued permit.

83. Condition 7.13.8(a) condition appears to contain an error in that it requires quarterly inspections for a number of affected activities for fugitive dust as long as all affected areas are inspected at least quarterly. However, US Steel believes that the Illinois EPA intended that observations be conducted on a quarterly basis for a number of

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<sup>90</sup> 35 IAC 219.301, Use of Organic Material, provides that No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lbs/hr) of organic material into the atmosphere from any emission unit, except as provided in Sections 219.302, 219.303, 219.304 of this Part and the following exception: If no odor nuisance exists the limitation of this Subpart shall apply only to photochemically reactive material.

<sup>91</sup> Condition 7.12.4(d) provides that "The affected gasoline storage tanks are not subject to 35 IAC 219.301 because the affected gasoline storage tanks do not use organic material [35 IAC 219.301]."

affected activities as long as all affected activities are observed at least once per calendar year.

**Response:** US Steel' understanding, as expressed in this comment, is not correct. As set forth in the planned revised permit, all affected activities are to be inspected on at least a quarterly basis. However, these observations do not need to be concurrent. For example, observations for activities at the blast furnaces can be conducted at a different time during the quarter than activities at the BOF shop. Accordingly, no changes have been made to the revised CAAPP permit in response to this comment.

84. In Condition 8.1, the "end date" associated with the applicability of the permit shield was not provided in the planned revised CAAPP permit, containing a blank space in its place.

**Response:** For applicants for CAAPP permit that request a permit shield, the Illinois EPA is required to identify those requirements for which the source is shielded (See Section 39.5(7)(j)(ii) of the Act). The Act vests discretion with the Illinois EPA to extend the permit shield to newly applicable requirements that are promulgated after the issuance of a proposed permit and prior to the issuance of the final permit, provided that the permit mirrors the new requirements.<sup>92</sup> In this instance, the Illinois EPA extended the permit shield to include applicable requirements that have been promulgated through the date of issuance of this revised CAAPP permit, i.e., May 2, 2011. Notably, this action ensures that the revised CAAPP permit addresses the Boiler NESHAP, which was not actually promulgated until March 21, 2011.<sup>93</sup>

85. The planned revised CAAPP permit would include a new standard permit condition, Condition 9.1.3, that was not in previous CAAPP permits. The condition is overly broad and does not recognize protections afforded to the Permittee by applicable law, the permit shield, court orders, and agreements with the Illinois EPA or USEPA.

**Response:** The Illinois EPA disagrees with this comment. Rather than being overly-broad, this condition is limited to two propositions that are already reflected in the CAAPP and widely recognized by applicable legal doctrines. The first proposition is that a Title V permit does not address the separate obligations that are imposed upon a permittee under the provisions of Title I of the Clean Air Act. Such obligations (past, present and future) involve requirements relating to the construction or modification of emission units/sources, rather than the operation of such emission units/sources, which is regulated by Title V of the Clean Air Act. The same concept is generally recognized in the application requirements of the CAAPP.<sup>94</sup>

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<sup>92</sup> By application of traditional rules of statutory construction, the same discretion can be said to extend to permits that, as here, are revised following the completion of the public petition process under Section 39.5(9)(g) of the Act.

<sup>93</sup> The rulemaking adopting the Boiler NESHAP was signed by the Administrator of USEPA before the preparation of the planned revised CAAPP permit was completed and the planned permit was made available for review and comment by interested members of the public. However, the Boiler NESHAP was not actually adopted until it was published in the Federal Register, which occurred on March 21, 2011.

<sup>94</sup> Section 39.5(5)(k) of the Act states that the obligation to submit a CAAPP permit application "shall not affect the requirement that any source have a preconstruction permit under Title I of the Clean Air Act."

The second proposition is that the revised CAAPP permit does not "alter or affect" any liability arising from a violation of an applicable requirement occurring before or at the time of permit issuance. This provision generally comports with the legal precept that the issuance of a permit does not usually shield a permittee from past noncompliance. More specifically, the same concept is expressly embodied in the CAAPP provisions governing permit shields, which are applicable to US Steel's CAAPP permit by virtue of its formal request for, and the Illinois EPA's resulting issuance of, a permit shield as part of the CAAPP permit.<sup>95</sup>

**FOR ADDITIONAL INFORMATION**

Questions about this permitting decision should be directed to:

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<sup>95</sup> Section 39.5(7)(j)(iv)(B) of the Act provides that for sources seeking a permit shield, nothing shall "alter or affect the... liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance." See, 415 ILCS 5/39.5(7)(j)(iv)(B).

## Summary of Significant Changes between Planned and Issued Revised CAAPP Permits

### Changes Related to Startup and Malfunction or Breakdown

Changes were made to enhance requirements for the coke oven batteries, the coke by-product plant, the blast furnace operations, the basic oxygen processes, the slab reheat furnaces and the boilers).

Records Related to State Provisions for Startup and Malfunction or Breakdown  
Requirements have been enhanced to include recordkeeping for additional information related to the startups and malfunction breakdown incidents where exceedances of state emissions standards are addressed in the permit pursuant to 35 IAC Part 201, Subpart I. The additional information that is required to be kept will facilitate review of startups and malfunction/breakdown incidents by the Illinois EPA to determine whether provisions of 35 IAC Part 201, Subpart I have been satisfied. For example, they will enable the Illinois EPA to determine whether events could have been prevented, whether emissions were minimized during events, and whether actions are taken to prevent similar events in the future.

### Reporting Related to Startups

Semi-annual "startup reports" are required for emission units for which exceedances of state emissions standards during startup are addressed in the permit pursuant to 35 IAC Part 201, Subpart I. These reports will facilitate review of such startups by the by the Illinois EPA to determine whether provisions of 35 IAC Part 201, Subpart I have been satisfied.

### Changes Related to Periodic Monitoring

#### Procedures for Handling Records for the Actual Emission Factors

The issued permit includes additional procedural requirements for the required records related to the emission factors that US Steel uses to determine actual emissions for purposes of determining compliance with permit limits. To facilitate supervision of the emission factors by the Illinois EPA, as well as to facilitate public access to these records, the issued permit requires that copies of these records must be submitted to the Illinois EPA. It also specifies a date by which the records must be initially prepared by US Steel, coordinated with the first determination of compliance with annual permit limits under the revised permit. (See Condition 5.9.6(c).)

#### Inspections for COG and BFG Flare

The issued permit requires monthly observations of the flares for the presence of visible emissions, followed by opacity observations if visible emissions are present. Observations must be coordinated with wind speed to provide at least two observations each year during conditions of elevated wind speed. These enhancements address possible variation in the operation of flares due to weather conditions.

#### Recordkeeping for Upsets at the Blast Furnace Casthouse and BOF Shop

Additional records are required for the Blast Furnace Casthouse and BOF Shop to address process upsets. These records are required to identify events that might contribute to additional opacity or PM emissions that would not be identified by other means.

#### Emission Testing for Continuous Casting Operations

Testing for PM emissions is required for the continuous casting operations. This testing will measure the normal PM emission rates from the continuous

casters, as is desirable to confirm both compliance with applicable standards and the accuracy of the emission factors used to calculate actual PM emissions. It is more straightforward to mandate that such testing be conducted than to require it on a contingent basis, e.g., if visible emissions are observed from continuous casting operations.

#### Other Changes

##### Applicability of 35 IAC 214.301

Condition 7.3.3(g), which would have applied 35 IAC 214.301 to the Thermal Oxidizer for the Sulfur Recovery Unit in the COG Desulfurization System, is not present in the issued permit. This is because of the exemption from 35 IAC 214.301 in 35 IAC 214.302. A nonapplicability provision is included in its place, Condition 7.3.4(e).