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PRELIMINARY FEEDBACK ON POTENTIAL STANDARDS FOR THE INTEGRATED IRON AND STEEL MANUFACTURING NESHAP

Prepared by American Iron and Steel Institute and United States Steel Corporation with the assistance of AECOM

As EPA proceeds in its reconsideration process of the II&S NESHAP in light of *Louisiana Envtl. Action Network v. EPA*, 955 F.3d 1088 (D.C. Cir. 2020), we understand that EPA is evaluating additional, and revisions to existing, standards for certain emission sources at II&S facilities. EPA staff members have requested the companies' feedback on the agency's preliminary thoughts on potential standards during this process. This email follows up on two prior submittals:

> January 19, 2023: Information regarding results of fenceline monitoring undertaken pursuant to the 2022 Information Collection Request (ICR) ("January Submittal")
>
> February 22, 2023: Information regarding potential work practice and opacity standards ("February Submittal")

Section I below provides supplemental feedback on potential standards. Section II supplements our January Submittal. Section II and each subsection of Section I include a list of items on which any proposal needs to solicit comment to ensure it obtains appropriate input from members of the public (including the companies) and to maximize EPA's flexibility in a final rule (*i.e.*, to ensure that the full range of potential final actions will be considered logical outgrowths of the proposal).

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I. FEEDBACK ON POTENTIAL OPACITY AND WORK PRACTICE STANDARDS

A. Basic Oxygen Process Furnace (BOPF) Shop

1. <u>BOPF Opacity Standards</u>

a. Existing regulations include a 20 percent (3-minute average) opacity limit for this source with monitoring twice per permit term (midterm and renewal).[1] In our February Submittal, we explained that: the current standard does not need to be amended; increased quarterly Method 9 monitoring will increase compliance assurance with the limit; and any additional work practice standards are unnecessary when an opacity limit applies.

b. Existing data and enforcement actions do not support revision to the existing opacity standard.

c. An increase from twice per permit term, *i.e.*, twice per five years, to quarterly monitoring is a tenfold increase that would assuage any concern regarding compliance assurance and monitoring costs.

d. To propose or finalize a standard lower than 20 percent would require evaluation of a larger data set that covers a longer timeframe than the 2022 ICR data. The 2022 ICR data covers a snapshot of only a short period of time (approximately only 3 to 6 hours per BOPF and similar very limited hours at other ICR sources discussed below) that does not account for seasonal variations in the emissions from this source, which EPA knows occur.[2] In other words, the 2022 ICR responses are representative of only a point in time but cannot be deemed representative of the full range of operating conditions that the facility will experience or of the iron/steel grades that a facility will process over the course of a year. EPA already possesses other longer-term data, including information obtained in its own enforcement actions showing occasional exceedances of 20 percent opacity levels at all facilities, which suggests the need for enough data to show distribution between lower readings and readings above 20 percent.

e. EPA has indicated that it was planning to rely on only the snapshot of the 2022 data for the BOPF Shop opacity and average the opacity levels observed for the top 5 sources to propose respective opacity limits. The following items describe other more representative ways of using available data under Section 112(d)(6). Each would need to be evaluated through the analysis of sufficient datasets. The discussion below should be considered preliminary feedback by the companies and not supportive of any given approach.

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[1] EPA explained in the preamble to the original proposed rule that the MACT floor was 20 percent on a 3-minute average for both new and existing top blown and bottom blown BOPF shops. 66 Fed. Reg. 36,849 (July 13, 2001). EPA ultimately imposed a more stringent standard for new sources, but for "both existing bottom blown and top blown BOPF shops, [it] selected an opacity limit for fugitive emissions of 20 percent using 3-minute averages. *Id.*; *see also, id*. at 36,865, Table 1, Row 10 ("You must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the BOPF shop or any other building housing the BOPF or BOPF shop operation that exhibit opacity greater than 20 percent (3-minute average)." Compliance assurance is determined pursuant to Section 63.7823(d)(1), which involves a modified version of Method 9, given the 3-minute averaging period and the specified performance test is to be conducted at least twice during each Title V permit term (at midterm and renewal), *see* 40 C.F.R. § 63.7823(d)(1), at Table 3, Row 9.

[2] *See* EPA II&S Final Rule, 68 Fed. Reg. 27,646, 27,654-5 (May 20, 2003) ("We closely examined the data that covered a reasonably long period of time (e.g., **<u>at least 1 year</u>** to capture seasonal variations). . . . We believe it is important to account for seasonal variations and examine data **<u>covering 1 year or more</u>** to account for variability due to differences in ventilation rates, weather conditions, and changes in the process over time.").

i. First, because EPA is using Section 112(d)(6), it has the discretion to look beyond the top 5 best-performing units. As shown in Table 1, calculating an upper prediction limit (UPL) analysis based on all sources' maximum opacity from the 2022 ICR snapshot data for the BOPF Shop opacity and using the 99% UPL to determine a new proposed limit demonstrates an opacity closer to 15 percent for the BOPF Shop.

ii. Second, an analysis of available longer-term data from all sources demonstrates that all sources may have a very small number of exceedances above 20 percent as shown in Table 2 – which is in accordance with the way the existing opacity standard was originally derived.[3]

iii. Third, a statistical analysis of BOPF maximum daily opacity data from one plant that consists of more than five years' worth of data provides a 99th percentile of 27.5 percent opacity as shown in Table 3 (see Attachment A) – which supports maintaining the existing MACT BOPF 20 percent opacity limit. The use of at least one year's worth of data is consistent with EPA's May 20, 2003 stated data criteria, described in footnote 2. Specifically, these data appropriately account for seasonal weather condition variations and process variabilities.

f. *If EPA nonetheless decides to consider an opacity limit, we offer the following feedback*:

- ***Form of the Standard Includes Excursions Above the Numerical Limit:*** Any such proposal must include provisions for allowable excursions above the limit to capture normal occasional fluctuation events that result during operations. For example, any proposal should follow the form of the current "new source" BOPF MACT opacity standard:
  - Maintaining the opacity (for any set of 6-minute averages) of secondary emissions that exit any opening in the BOPF shop or other building housing a bottom-blown BOPF or shop operation at or below 15 percent, except that 6-minute periods greater than 15 percent but no more than 20 percent may occur twice per steel production cycle. A steel production cycle is defined in 40 C.F.R. § 63.7822.
  - Maintaining the opacity (for any set of 3-minute averages) of secondary emissions that exit any opening in the BOPF shop or other building housing a top-blown BOPF or shop operation at or below 15 percent, except that 3-minute periods greater than 15 percent but less than 20 percent may occur twice per steel production cycle. A steel production cycle is defined in 40 C.F.R. § 63.7822.
- If EPA were to propose a limit lower than 15 percent, the number of allowable excursions would need to be higher.
- EPA solicits comment on whether the opacity limit and the number of allowable excursions should be higher or lower and on the data used in support of the limit and excursions.

2. <u>BOPF Solicitation of Comment and Data on Opacity</u>

a. EPA solicits comment on all aspects of the proposed BOPF opacity standards and compliance assurance provisions, including on whether EPA should not adopt revisions to the current requirements. In particular, EPA solicits comment on the number of excursions that is reasonable to provide if the opacity standard is lowered to 10 percent or 15 percent and the applicable

[3] EPA based the existing 20 percent BOPF MACT limits on opacity conformance rates **<u>greater than 99% but less than 100%</u>**, which means that there was a statistical expectation of occasional exceedances greater than 20 percent. The MACT 20 percent limits were also based on a review of state opacity limits. *See* National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing, 68 Fed. Reg. 27,646, 27,651, 27,655 (May 20, 2003).

averaging period that should be used. Commenters should explain the basis for their positions that additional requirements are appropriate or that the existing standards should not be changed.

b. EPA solicits comment on whether an opacity limit alone should be issued or whether work practice standards should also be promulgated.

c. EPA requests that commenters provide any additional data that support their positions on opacity and work practices.

Table 1 – 99% UPLs for BOPF and BF derived from all sources' maximum opacity from the 2022 ICR snapshot data and Bleeder Openings derived from top 5 best-performing units.

Source Type / Description	99% UPL
BOPF Shop (All)	12.3%
BF Casthouse (All)	15.2%
Planned Bleeder Openings (Top 5)	21.8%

Table 2 – BOPF and BF highest opacity percentages when evaluating multiple years' worth of data from all sources.[4]

II&S Opacity Data (%)	Additional Data Blast Furnace Casthouse max. 6-min. avg.		Additional Data BOPF Shop Fugitive max. 3-min. avg.
Facility 1	**62%**		**41%**
Facility 2	**>20%**		**32%**
Facility 3	**32.1%**		**77.5%**
Facility 4	**44.2%**		**27%**
Facility 5	**>20%**		**57.5%**
Facility 6	**30%**		**70%**
Facility 7	**41%**		**33%**

Table 3 – Statistical analysis of the BOPF opacity fugitive data (3-minute average) and BF opacity fugitive data (6-minute average) at an Integrated Iron and Steel facility performed from 2018-2023 using ProUCL version 5.2.[5]

Source Type	99th Percentile (ProUCL)
BOPF Shop	27.5%
BF Casthouse	28.4%

[4] One facility has limited data; therefore it was not included in Table *2*.

[5] The values in Table 3 are the statistical percentile (99th) percent opacity values using all of the daily maximum opacity readings for the BOPF Shop from January 3, 2018 to March 17, 2023 and for the BF Casthouse from January 9, 2014 to April 27, 2016. The BF Casthouse data used from years 2014 through 2016 included data from a full cast, whereas data after April 27, 2016 did not and was not used. Using EPA's ProUCL version 5.2, a 99th percentile UPL was calculated using the nonparametric method, which is appropriate for skewed datasets, included in Attachment A.

3. <u>BOPF Work Practice Standards</u>

a. **Additional work practices beyond what are already required in the existing operations and maintenance requirements are unnecessary and should not be required.**

b. While EPA statements during the risk and technology review (RTR) rulemaking estimated emissions reductions that would be attributable to work practice requirements, those projected reductions are illusory – they fail to account for the fact that facilities are already implementing work practices similar to those being proposed. As a result, the projected emission reduction estimates are inaccurately high because proposed work practice requirements would not result in meaningful *additional* reductions. Below, we address specific work practices that we understand to be under consideration.

c. ***Ladle Position:*** EPA should not include a work practice regarding optimizing a ladle position because the ladle is operated manually by a skilled worker who needs to be able to react to the heat of molten iron being poured and the immediate situation.

d. ***Pour Rate:*** EPA should not include a work practice regarding a maximum pour rate during the first 20 seconds because BOPFs are not equipped with instrumentation associated with hot metal charge or flow to control pour rate or any means to measure a pour rate during the first 20 seconds. In addition, facilities typically begin with a slower iron pour at the start, and any pour rate or tilt angle derived from one facility would not necessarily apply at other BOPFs because BOPF design and specific operations vary.

e. ***Foaming:*** EPA should not include a limit of a specific amount in a work practice regarding minimizing or preventing foaming slag in the mouth of the vessel because sources are already subject to existing 20 percent opacity limit for BOPF shops, thus it is unnecessary for EPA to include a prescribed work practice regarding foaming slag in any rule. The causes and any corresponding actions related to slag foaming are case-by-case and facility-specific for which operators make decisions based on experience and site-specific conditions at the time of such an occurrence. Many occurrences of slag foaming are minimal and do not result in elevated emissions to the ambient air. Facilities have, and continue to, work to minimize occurrences of slag foaming because they are undesirable from an operational standpoint as excess slag results in decreases to yield and production. Not all such events are avoidable.

f. ***Openings:*** EPA should not include a work practice standard to (i) keep all openings closed except under specified circumstances or (ii) inspect for such openings. First, BOPF shops are designed with openings for operating equipment entry and egress and to ensure ventilation that provides safe operating conditions for workers.[6] In addition, work practice requirements would be duplicative of existing rules: 40 C.F.R. § 63.7800(b) already includes a requirement for a written operation and maintenance (O&M) plan for each capture system or control device subject to NESHAP limits; and 40 C.F.R. § 63.7810(d) requires operation of the source in a manner consistent with safety and good air pollution control practices for minimizing emissions.

[6] For a more detailed explanation of safety concerns regarding building openings, please see November 7, 2019 AISI and U. S. Steel's Joint Comments on the 2019 National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing Facilities Residual Risk and Technology Review, https://www.regulations.gov/comment/EPA-HQ-OAR-2002-0083-1059.

B. Blast Furnace (BF) Casthouse

1. <u>BF Casthouse Opacity Standards</u>

a. **The current MACT contains a 20 percent (6-minute average) opacity limit for this source with monitoring twice per permit term (midterm and renewal). In February, we explained that the current standard does not need to be amended because additional Method 9 monitoring on a quarterly basis would increase compliance assurance with the limit.**

b. Quarterly monitoring is a tenfold increase in the current frequency**.**

c. EPA has indicated that it was planning to rely on only the snapshot of the 2022 data for BF Casthouse opacity and average the opacity levels observed for the top 5 sources to propose opacity limits. The following items describe other more representative ways of using available data under Section 112(d)(6). Each would need to be evaluated through the analysis of sufficient datasets. This discussion below should be considered preliminary feedback by the companies and not support of any given approach.

i. Because EPA is using Section 112(d)(6), it has the discretion to look beyond the top 5 best-performing units. As shown in Table 1, calculating a UPL analysis based on all sources' maximum opacity from the 2022 ICR snapshot data for the BF Casthouse opacities and using the 99% UPL to determine a new proposed limit demonstrate an opacity closer to 15 percent (6-minute average) opacity for the BF Casthouse.

ii. Second, an analysis of available longer-term data from all sources demonstrates that all sources may have a very small number of exceedances above 20 percent as shown in Table 2 – which is in accordance with the way the existing opacity standard was originally derived.[7]

iii. Third, a statistical analysis of BF maximum daily opacity data from one plant that consists of more than two years' worth of data provides a 99th percentile of 28.4 percent opacity as shown in Table 3 (see Attachment A) – which supports maintaining the existing MACT BF 20 percent opacity limit. The use of at least one year's worth of data is consistent with EPA's May 20, 2003 stated data criteria, described in footnote 2.

d. To propose or finalize a standard lower than 20 percent would require evaluation of a larger dataset that covers a longer timeframe than the 2022 ICR snapshot dataset, which covers only a short period of time and does not account for the known seasonal variations in these emissions, which EPA has already recognized occur.[8] EPA already possesses other longer-term data, including enforcement data, showing occasional exceedances of the 20 percent opacity level at

[7] EPA based the existing 20 percent BF MACT limits on opacity conformance rates **<u>greater than 99% but less than 100%</u>**, which means that there was a statistical expectation of occasional exceedances greater than 20 percent. The MACT 20 percent limits were also based on a review of state opacity limits. *See* National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing, 68 Fed. Reg. 27,646, 27,651, 27,655 (May 20, 2003).

[8] *See* EPA II&S Final Rule, 68 Fed. Reg. 27,646, 27,654-5 (May 20, 2003) ("We closely examined the data that covered a reasonably long period of time (e.g., **<u>at least 1 year</u>** to capture seasonal variations). . . . We believe it is important to account for seasonal variations and examine data **<u>covering 1 year or more</u>** to account for variability due to differences in ventilation rates, weather conditions, and changes in the process over time.") (Emphasis added.).

all facilities, which suggests the need for more data to show distribution between all of the lower readings and readings above 20 percent.[9]

e. *If EPA nonetheless decides to consider an opacity limit, we offer the following feedback*:

- ***Form of the Standard Includes Excursions Above the Numerical Limit:*** Any such proposal must include provisions for allowable excursions above the limit to capture normal occasional fluctuation events that result during operations. For example, any proposal should follow the form of the current "new source" MACT opacity standard:
  - Maintaining the opacity of fugitive emissions that exit all openings in the casthouse or structure housing the casthouse at or below 15 percent (6-minute average); except that 6-minute periods greater than 15 percent but no more than 20 percent may occur twice per cast. A cast begins when the furnace is opened, usually by creating a hole near the bottom of the furnace, and ends when the hole is plugged, as defined in 40 C.F.R. § 63.7823.
  - If EPA were to propose a limit lower than 15 percent, the number of allowable excursions would need to be higher.
- EPA solicits comment on whether the opacity limit and number of allowable excursions should be higher or lower and on the data used in support of the limit and excursions.

2. <u>BF Casthouse Solicitation of Comment and Data</u>

a. EPA solicits comment on whether a revision of the existing opacity limit is appropriate and on the form of any such revised standard, including providing a target level with a set number of allowed excursions above the limit during a cast. EPA solicits comment on how such a provision could be structured to incentivize continuous improvement in fugitive emissions levels.

C. Bleeder Valve Planned Openings

1. <u>Planned Opening Opacity/Work Practice Standards</u>

a. Using conservative assumptions, that we believe overestimate emissions, EPA estimated this source to emit less than 1 tpy HAPs[10] at the largest facility and 2.9 tpy HAPs industrywide.[11] The level of existing emissions needs to be considered in any cost-effectiveness evaluation.

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[9] EPA based the 20 percent BF MACT limits on opacity conformance rates ***greater than 99% but less than 100%***, *e.g.*, 99.8%, indicating that the limit derivation includes a statistical expectation of occasional exceedances greater than 20 percent. The MACT 20-percent limits were also based on a review of state opacity limits. *See* National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing, 68 Fed. Reg. 27,646, 27,655 (May 20, 2003).

[10] *See* Mem. of Donna L. Jones, EPA Sr. Technical Advisor, to II&S RTR Project File on Development of Emissions Estimates for Fugitive or Intermittent HAP Emission Sources for an Example II&S Facility for input to the RTR Risk Assessment, EPA-HQ-OAR-2002-0083-0956, at 14, Table 9 (May 1, 2019), https://www.regulations.gov/comment/EPA-HQ-OAR-2002-0083-0956 (hereinafter "2019 EPA Emission Estimates Mem.").

[11] *See* Mem. of Donna L. Jones, EPA Sr. Technical Advisor, to II&S RTR Project File Ample Margin of Safety Analysis for Nonpoint Sources in the II&S Industry, EPA-HQ-OAR-2002-0083-0953, at 20, Table 3-1 (May 1, 2019), https://www.regulations.gov/document/EPA-HQ-OAR-2002-0083-0953 (hereinafter "2019 EPA AMOS Mem.").

b. A 99% UPL-based calculation of available data from the top 5 best-performing units from the 2022 ICR snapshot data for planned bleeder opening opacities results in 22 percent opacity (see Table 1).

c. This result is similar to existing state SIP 20 percent (6-minute average) opacity limits.

d. For planned openings, no opacity limit should be imposed. Instead, the regulations should require the development of an O&M plan that includes the work practices listed in our February Submittal.

> *<u>February Submittal</u>: The plan shall include procedures to minimize emissions during planned bleeder valve openings, which may include, for example:*
> *a. Reducing or stopping tuyere fuel injection;*
> *b. Reducing hot blast pressure to an established value.*

e. ***Testing Frequency:*** Conducting Method 9 or Method 22 opacity observations during every planned opening is infeasible because a "planned" opening event does not mean the event has been planned with enough lead time to schedule a certified observer or that the planned opening will occur during a time when a certified observer will be available or have the ability to perform the visible emissions observation (VEO). For instance, a planned event may need to occur within an hour, or the opening may need to be performed outside of normal working hours, or both.

f. *If EPA nonetheless decides to consider an opacity limit, we offer the following feedback*:

- The opacity limit should be based on at least one year of data that allows a statistical analysis that is consistent with EPA's May 20, 2003 stated data criteria, which include appropriately accounting for seasonal weather condition variations and process variabilities.[12]
- Any proposal should follow the form of the maintenance trigger in existing regulations:
- A compliance assurance demonstration would serve as an O&M trigger. The compliance assurance demonstration should be based on 2-3 readings – *e.g.*, as performed under the 2022 ICR, the companies would take readings of 2-3 shutdowns lasting for the earliest of: 1 hour or until the readings reach no greater than 10 percent[13] (which is a reading below applicable state limits and the way testing was conducted under the 2022 ICR) for 3 minutes after the bleeder opening.
- If the compliance assurance demonstration shows opacity above the limit, then the facility would adjust its work practices and repeat the readings to demonstrate that observed opacity is below the opacity limit.

2. <u>Planned Opening Solicitation of Comment</u>

a. If the proposal were to include an opacity limit of less than 20 percent: EPA requests comment on only establishing a work practice standard for planned openings, including what requirements should be included in such a standard.

[12] *See* 68 Fed. Reg. at 27,654-5.

[13] The companies present this percentage solely with regard to conducting testing in the same fashion as conducted under the 2022 ICR.

D. Bleeder Valve Unplanned Openings

1. <u>Unplanned Openings Work Practice Standards</u>

a. Using conservative assumptions, that we believe overestimate emissions, EPA estimated this source to emit less than 1 tpy HAPs[14] at the largest facility and less than 4.4 tpy HAPs industrywide,[15] which needs to be considered in any cost-effectiveness evaluation.

b. **We do not believe that work practices should be imposed for these infrequent, low-HAP sources that are safety pressure relief devices.**

c. *If EPA nonetheless decides to consider additional requirements, we offer the following feedback*:

- **EPA should seek comment on requiring the O&M plan to include facility-specific work practices directed at minimizing their frequency. EPA could propose adding (<u>b)(i)</u> below to what we provided in our February Submittal.**

  <u>February Submittal</u>: In addressing unplanned bleeder valve openings:
  a. For furnaces that rely on a stockline monitoring device, the plan shall document the procedures for use of the stockline monitoring device to measure stockline and burden movement that are used to minimize the frequency of unplanned openings.
  b. For furnaces that do not rely on a stockline monitoring device, the plan shall include procedures to minimize the frequency of unplanned openings.
  i. Proper management of raw materials (e.g., implementing a quality control plan).
  c. Records of the date and duration of unplanned openings shall be maintained.

c. EPA should not require stockline monitors, which are subject to malfunction – making them unreliable – and which do not prevent unplanned openings.

E. Beaching

1. <u>Beaching Work Practice Standards</u>

a. Using conservative assumptions, that we believe overestimate emissions, EPA estimated this source to emit less than 0.01 tpy HAPs[16] at the largest facility and less than ~0.06 tpy HAPs industrywide,[17] which needs to be considered in any cost-effectiveness evaluation. This is due, in part, to the fact that these are very infrequent and undesirable occurrences from an operational standpoint.

b. Facility-specific work practices should be included in an O&M plan, as discussed in our February Submittal.

<u>February Submittal</u>: In addressing iron beaching operations, the plan shall include procedures that address the following in order to minimize emissions:
a. Preparing the beaching area prior to the beaching of iron in a manner designed to minimize fugitive emissions from the process;
b. Controlling the pour rate from the torpedo car to minimize fugitive emissions;

[14] *See* 2019 EPA Emission Estimates Mem., at 14, Table 9 (May 1, 2019).
[15] *See* EPA 2019 AMOS Mem., at 20, Table 3-1.
[16] *See* 2019 EPA Emission Estimates Mem., at 14, Table 9.
[17] *See* EPA 2019 AMOS Mem., at 20, Table 3-1.

c. Managing visible emissions when they occur through observation of emissions from the process, if any, and responding to such emissions, e.g., by taking steps to adjust the iron pour rate, pause or stop the pour, or move to a different pour location as appropriate.

c. The SIP opacity limits already in place that apply in beaching areas serve as a baseline control level for these operations.

d. ***Enclosures:*** EPA should not impose prescriptive enclosure requirements for beaching because the cost to build such enclosures is significant, and the potential emission reduction is low, thus they are not cost-effective emissions controls. In addition, installation of enclosures would be infeasible at facilities with space limitations.

e. ***CO_2 Suppression:*** Similarly, the cost of implementing CO_2 suppression is significant compared to the low potential for emissions reduction. Further, work practices for CO_2 suppression present safety concerns for full enclosures such that they should neither be proposed nor be a subject of comment solicitation.

F. Bell Leaks

1. <u>Bell Leaks Opacity and Work Practice Standards</u>

a. Using conservative assumptions, that we believe overestimate emissions, EPA estimated this source to emit less than 0.45 tpy HAPs at the largest facility[18] and ~6 tpy HAPs industrywide,[19] which needs to be considered in any cost-effectiveness evaluation.

b. Our February Submittal explained that a 20 percent (6-minute average) opacity limit, which is consistent with existing SIP opacity limits, combined with quarterly Method 9 monitoring, would be appropriate.

c. While every state has general opacity limits that apply to bells, no state has decided to impose source-specific limits for bell leaks, so our suggested approach would represent a new requirement for bell leaks.

d. EPA lacks statistical data to support an opacity limit, especially one that is more stringent than 20 percent, because the 2022 ICR included Method 22 Visible Emissions Observations (which measures duration of opacity being present), not Method 9 (which measures opacity percent). Therefore, there is no statistical analysis available to provide a reasonable basis to set enforceable limits.

e. Any repair or replacement trigger based on some visible smoke is problematic because it is based on a false premise that a properly operating bell has no visible emissions; even newly installed bells may have visible emissions.[20]

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[18] *See* 2019 EPA Emission Estimates Mem., at 14, Table 9.

[19] *See* EPA 2019 AMOS Mem., at 20 Table 3-1.

[20] *See* Donna L Jones, EPA Sr. Technical Advisor, *Emission Factor Evaluation for Blast Furnace Bell Leaks*, at 1 (July 10, 2017) ("Calculations based on an estimate of the average size of **<u>the gap in new bells</u>** (50 µm) and particle size distribution of blast furnaces gas. Assumed that all particles less than 50 µm in the blast furnace gas leaving burden on its way to uptake ducts **<u>would instead leak through the bell</u>**.") (emphasis added), https://www.regulations.gov/document/EPA-HQ-OAR-2002-0083-1050.

f. *If EPA nonetheless decides to consider a work practice standard, we offer the following feedback:*

- **EPA should:**

  1. **Use a production-based trigger monitoring opacity from for large and small bells; <u>and</u>**
  2. **Require opacity readings quarterly that commence approximately 6 months prior to the production-based estimated predicted replacement schedule; <u>and</u>**
  3. **If such opacity readings show an excursion of above 20 percent (6-minute) limit that cannot be corrected via an operational change, then the facility would prepare, within a certain amount of time, a corrective action plan to repair or replace the bell**.

- EPA should allow for an opportunity to make operational changes and conduct repeat testing prior to any requirement for repair or replacement, which may not be necessary.

- ***Limited time frame for capital projects:*** EPA should not include a repair or replacement to be completed within a certain time period (*e.g.*, several months) as a work practice requirement as every bell top campaign is unique and because both small and large bell replacements and repairs (depending on the repair required) are large capital projects that require indefinite lead times for equipment; project planning (*i.e.*, engineering, safety protocols, and logistical coordination); and corporate approval and funding authorizations for capital expenditures (*e.g.,* approximately $12 to $14 million for a large bell outage). Outage length requirements can vary widely, and scheduling of such projects must be consistent with other maintenance work.

2. <u>Bell Leaks Solicitation of Comment</u>

a. EPA solicits comment on all aspects of visible emissions for bell leaks, including the "normal range" of opacity or visible emissions for a properly operating bell and on how visible emissions are affected by the size of the bell or other physical characteristics, or by operational parameters.

b. EPA solicits comment on the responses (and timing thereof) for visible emissions/opacity triggers (regardless of level), including whether steps short of replacement should be available (*e.g.*, through operational changes or a corrective action plan within a given time period).

c. EPA solicits comment on the concept of potential triggers for large and small bells (*e.g.*, a production-based trigger) combined with opacity readings quarterly (beginning 6 months before the end of a production-based replacement cycle). The EPA specifically requests comment on the level of triggers and the required responses (*e.g.*, preparation within a certain amount of time of a corrective action plan to repair the bell (if feasible) and the number of failed repair attempts that would give rise to a replacement requirement).

II. ADDENDUM TO JANUARY SUBMITTAL: FEEDBACK ON POTENTIAL FENCELINE MONITORING

In our January Submittal, we provided the results of fenceline monitoring conducted as part of the 2022 ICR as well as other available ambient monitors and data from a prior 2011 II&S ICR related to EPA's RTR. That data demonstrated that, using extremely conservative assumptions, the overall risk is below 22 in a million at fenceline monitor locations nearest to sensitive receptors (*e.g.*, residences). In summary:

- Actual ambient data (8+ years) downwind of an iron and steel facility provide a hexavalent to total chromium ratio of 0.68% - 0.97%, which is supported by slag speciation testing data.
- For particulate metals, the inhalable portion of particulate matter (PM_{10}) should be used to assess risks; the use of total suspended particulate (TSP) rather than PM_{10} would significantly overestimate inhalation risk.
- Fenceline monitors that are nearest to sensitive receptors generally show lower estimated risks; monitors with higher measured concentrations are not representative of risk at sensitive receptors.
- Potential offsite contributions to these monitors have been identified, which would result in an overestimation of the risk attributable to II&S facilities.

1. <u>Potential Fenceline Monitoring</u>

a. The 2022 ICR results, which have already provided six months' worth of data, show low risk and demonstrate that fenceline monitoring is unwarranted and unnecessary.

b. EPA's hexavalent chromium to total chromium theoretical speciation range that has been based on flawed methodology using point source ICR stack testing should not be used. It is not representative, and the available, more accurate 8+ years of actual ambient monitoring data from downwind of an iron and steel facility should be used instead.

c. The post-NESHAP speciation range for hexavalent chromium to total chromium is 0.68% to 0.97% (Dearborn, MI).

d. Several factors impair the ability to implement changes to reduce total chromium, including the difficulty of determining the source of total chromium, offsite contributions to monitors, and delay before receiving lab results on the monitoring data, among other things.

e. Triggering immediate changes in work practices based on a single data value is unwarranted and is not supported by any established causal connection, given the numerous factors noted above. Such an approach would not be rational or reasonable based on the record that currently exists, and we do not believe that a record could be developed that would sustain that approach.

f. *If EPA nonetheless decides to propose or solicit comment on a limited fenceline monitoring requirement for total chromium (which we continue to believe is unwarranted), we offer the following feedback:*

- ***Measurement:*** Compliance assurance needs to be based on measuring the PM_{10} portion of total chromium.
- ***Action Level:*** Compliance assurance with any action level must be based on long-term average data. EPA must include an allowance for subtraction of background concentrations

(upwind/downwind, *i.e.*, delta-C). EPA must include an allowance for subtraction of other contributions.

- ***Sunset:*** Any proposed regulation should impose the monitoring at most for a six-month period, after which EPA would evaluate the information gathered and, only if warranted, undertake a rulemaking to establish a monitoring program that would be facility-based (applicable only to facilities for which the results to date support such a requirement) and include facility-specific sunset period criteria.
- ***Root Cause Analysis:*** The root cause analysis discussion has suggested that if the "action level" is exceeded, a facility would conduct a "root cause analysis" to determine why that was the case and address it. One problem with this approach is that increases above the action level are likely to be tied to causes outside of the source, and the short-term nature of the "action levels" means that a root cause will likely not be determinable. This is one reason why any action levels must be based on long-term averages.
- It is not rational to base an action level on emission reduction assumptions from implementation of any of the work practices above because many of those assumptions may be unsupported. There has been no connection established between fenceline concentrations and the work practices that have been discussed.

2. <u>Fenceline Monitoring Solicitation of Comment</u>

a. EPA solicits comment on whether or not fenceline monitoring is appropriate given the very low risk posed by the facilities as found in the RTR final rule and the recent information collected during the trial period.

b. EPA requests comment on the methodology that the agency used to develop the proposed action level [cite to a docket reference that explains the technical basis for any proposed action level] and whether a different action level or methodology should be utilized.

c. The EPA solicits comment on the time period and criteria for allowing a source to cease and remove fenceline monitoring and for any demonstrations or monitor levels that should be used as a basis for such removal.

d. If EPA proposes a requirement for fenceline monitoring that is based on compliance assurance: EPA solicits comment on compliance assurance being based on measuring the PM_{10} portion of total chromium.

e. If EPA proposes a requirement to implement changes in work practices that is based on a reading higher than the action level:

- EPA solicits comment on:

i. The option for EPA to (instead of requiring changes in work practices) approve discontinuation of monitoring for annual averages slightly above the action level; and

ii. The option for EPA to (instead of requiring changes in work practices) approve discontinuation of monitoring based on other sufficient justifications, such as an acceptable or undeterminable root cause.