UNITED STATES STEEL CORPORATION
(U. S. Steel)

USEPA Proposed Rule
National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing Facilities Residual Risk and Technology Review
(Iron and Steel NESHAP Review)

May 16, 2023

USEPA Proposed Rule: Iron and Steel NESHAP Review

U. S. Steel is committed to continuing to work with USEPA to develop and implement revisions to the Iron and Steel NESHAP which are:

- Consistent with the Clean Air Act
- Based on sound science and data
- Have demonstrated benefits to the environment
- Are technologically and economically feasible

USEPA Proposed Rule: Iron and Steel NESHAP Review

EPA has determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks.

Problems with proposed regulation

- **Thirteen *New* Hazardous Air Pollutant (HAP) limits**
  - Based on limited data
  - No proven control technology for some HAPs
  - Exorbitant costs
- **Additional Work Practices (Blast Furnace Bells, Beaching, BOPs)**
  - Sources already regulated
  - Government managing operations
- **Fenceline Monitoring for Total Chromium**
  - No correlation to risk
  - No recognition of off-site contributions
  - Implementation - Unanswered Questions
- **Lowering of Existing Opacity Limits**
  - Sources already regulated
  - Very low opacity limits - Not consistently achieved

USEPA Proposed Rule: Iron and Steel NESHAP Review

Ask:

OMB refer proposed rule back to USEPA, in consideration of risk and consistency with Clean Air Act, to:

- Gather more data
- Review proposed standard for technical feasibility
- Review cost benefit analysis

At a minimum, solicit comments on alternative requirements (see appendix)

EPA has determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks.

U. S. Steel and the Steel Industry are vital to national security and the domestic economy

Steel Industry Background

- Over $520 billion in economic output, supporting over 2 million jobs.
- For every $1 increase in sales for iron and steel mills, total output of the U.S. economy increases by $2.66.
- Generates over $56 billion in tax revenues annually
- In a study conducted under Section 232 of the Trade Expansion Act of 1962 (19 U.S.C. §1862), the U.S. Department of Commerce determined that ***domestic steel production is essential for national security; and that domestic steel production depends on a healthy and competitive U.S. industry*****.** (See https://www.bis.doc.gov/index.php/other-areas/office-of-technology-evaluation-ote/section-232-investigations)
- The iron and steel industry is a core critical infrastructure industry impacting transportation systems, electric power grid, water systems, and energy generation systems. (See https://www.cisa.gov/topics/critical-infrastructure-security-and-resilience/critical-infrastructure-sectors/critical-manufacturing-sector)

United States Steel Corporation - Background

- *Employs S.T.E.E.L. principles* **- S**afety First; **T**rust and Respect; **E**nvironmental Stewardship; **E**xcellence and Accountability; and **L**awful and Ethical Conduct
- Directly employees over 14,000 people in the United States; with an impact of and additional 98,000 additional jobs. (Each job in America's steel industry supports seven jobs in the U. S. economy.)
- Produced over 17 million tons of steel domestically in 2022.
- **Markets** served:
  - Automotive and Transportation
  - Construction
  - Containers and Packaging
  - Appliances and Electrical Equipment
  - Service Centers
- **Greenhouse Gas (GHG) Reduction Goals**
  - By 2030, 20% emission intensity reduction, compared with the 2018 base year.
  - By 2050, net-zero emissions
- **Community Engagement -** In 2022, U. S. Steel employees logged 20,000 hours to more than 100 organizations.

EPA has determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks.

Costs of Implementation

USEPA Cost for Steel Industry: $100 Million

vs.

U. S. Steel (only): Potentially Hundreds of Millions of Dollars*

* Potential costs are based on the estimated investment in proven technology to comply with the draft rule as we currently understand it and do not include estimated costs for technological investments for certain HAPs not yet developed and for which cost estimates cannot be determined

USEPA Proposed Rule: Iron and Steel NESHAP Review

EPA has determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks.

As we understand the draft rule, even if the draft limits would be achievable, the potential cost impacts to U. S. Steel alone could be hundreds of millions of dollars - which would exacerbate the import of low-cost, less environmentally conscious imported steel, potentially jeopardizing national security and critical infrastructure.

EPA has determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks.

Problems with proposed regulation

- **Thirteen *New* Hazardous Air Pollutant (HAP) limits**
  - Based on limited data
  - No proven control technology for some HAPs
  - Exorbitant costs

Recognize agency has authority under *LEAN* decision – Concern with the very stringent, unproven, and unsupported proposed limits

USEPA Proposed Rule: Iron and Steel NESHAP Review

Thirteen *New* Hazardous Air Pollutant (HAP) limits

Based on limited data

- **Low risk** - EPA has concluded the industry does not pose an unacceptable risk, reducing the HAP emissions from this subset of sources would not result in lowering the industry's overall risk.
- **Limited data -** Snapshot data (less than 5 sources), that is not representative of the industry
  - Based upon the data available, it would be impossible for EPA to determine the best performing five sources because in most instances EPA does not even have data for five sources nor is it able to show that the limit is the limitation of such five sources - as required by Section 112(d)(3).
- **Variability of test runs** - There are orders of magnitude differences in testing results that need to be addressed in any proposed limit.
- **Account for different products/processes** - Only a snapshot. It does not account for different steel grades, product mixes, etc. For many sources, only one or two stack tests in the entire industry were used to develop the standard - with each stack test only being a snapshot of data for the new HAPs based on the operating scenario occurring at the time.

USEPA Proposed Rule: Iron and Steel NESHAP Review

Thirteen *New* Hazardous Air Pollutant (HAP) limits

U. S. Steel Examples

Stack test results demonstrate exceedances of some of the proposed HAP floor standards. **(Source in the floor calc. but doesn't meet the standard)**

- USEPA - BF Casthouse Baghouse HCl Floor: 5.9 E-04
  - U. S. Steel - ET Casthouse Baghouse HCL Test: 7.4 E-04

- USEPA - BOF Primary Total Hydrocarbons Floor: 1.7 E-03
  - U. S. Steel - ET BOF Primary Total Hydrocarbons Test: 1.2 E-02

Some floors set with only 6 data points (2 stacks tests) that does not capture the variability within the iron and steel making industry.

- U. S. Steel - Granite City BOF Dioxin-Furan stack test Total:
  - Run 1: 5.7 E-10
  - Run 2: 5.8 E-09
  - Run 3: 1.1 E-08

USEPA Proposed Rule: Iron and Steel NESHAP Review

Thirteen *New* Hazardous Air Pollutant (HAP) limits

No proven control technology for some HAPs

- **Currently there are no existing controls for the new HAPs EPA is proposing to set a floor standard.**

- There are **no demonstrated controls in practice, that the industry is aware of, for many of the HAPs**. Therefore, it is unclear how EPA has determined how controls would achieve the new HAP limits; nor is it clear how EPA estimated the costs to comply with the new HAP limits. EPA's assessment is not that of the best *controlled* or best *performing* as required by CAA 112(d)(3).

- **EPA has not shown that the new standards are indeed achievable and maintainable by any source**, let alone being representative of the purported five best performing sources.

Thirteen *New* Hazardous Air Pollutant (HAP) limits

Exorbitant Costs

- For those sources where no technology is proven:
  - On the order of 100s of millions of dollars to the industry
  - Controls will need to be developed and trialed - something clearly not contemplated by Congress in Section 112(d)(3), if the limits are even technologically feasible.
- For those sources where control technology is proven:
  - Estimated $100s of millions at a minimum of 14 potential sources.
  - Examples - One baghouse or scrubber for one source:
    - Cost ranges $10 - 50 million with annual operating costs (Need to include not only the control equipment but also infrastructure - ductwork, electrical substations etc.)

Legal Background - EPA Integrated Iron and Steel Manufacturing (IIS) Residual Risk and Technology Review Rulemaking

- April 21, 2020: U.S. Court of Appeals for the D.C. Circuit opinion in *LEAN v. EPA* (No. 17-1257) held that EPA has an obligation to set standards for **unregulated pollutants** as part of technology reviews under CAA section 112(d)(6).
- "[T]he Act is best read to require any **underinclusive emission standards** be "revised" as "necessary" to comply with **section 112(d)(2)-(3)** during the eight-yearly review set by section **112(d)(6)**." *LEAN* at 1099.
- **Unregulated pollutants are subject to section 112(d)(2)-(3) standard of review.**
- Regulated pollutants subject to section 112(d)(6) standard of review

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Legal Background - New HAP Limits - Clean Air Act – Section 112(d)

(2)STANDARDS AND METHODS Emissions standards promulgated under this subsection and applicable to new or existing sources of hazardous air pollutants shall require the maximum degree of reduction in emissions of the hazardous air pollutants subject to this section (including a prohibition on such emissions, where achievable) that the Administrator, ***taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable*** for new or existing sources in the category or subcategory to which such emission standard applies, through application of measures, processes, methods, systems or techniques including, but not limited to, measures which—

(A) reduce the volume of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications,

(B) enclose systems or processes to eliminate emissions,

(C) collect, capture or treat such pollutants when released from a process, stack, storage or fugitive emissions point,

(D) are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in subsection (h), or

(E) are a combination of the above.

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Legal Background - New HAP Limits - Clean Air Act – Section 112(d)

(3) NEW AND EXISTING SOURCES The maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source, as determined by the Administrator. Emission standards promulgated under this subsection for existing sources in a category or subcategory may be less stringent than standards for new sources in the same category or subcategory but shall not be less stringent, and may be more stringent than—

(A) the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information), excluding those sources that have, within 18 months before the emission standard is proposed or within 30 months before such standard is promulgated, whichever is later, first achieved a level of emission rate or emission reduction which complies, or would comply if the source is not subject to such standard, with the lowest achievable emission rate (as defined by section 7501 of this title) applicable to the source category and prevailing at the time, in the category or subcategory for categories and subcategories with 30 or more sources, or

(B) the average emission limitation *achieved* by the best *performing* 5 sources (for which the Administrator has or could reasonably obtain emissions information) in the category or subcategory for categories or subcategories with fewer than 30 sources.

EPA has determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks.

Problem with proposed regulation

- **Additional Work Practices (Blast Furnace Bleeders & Bells, Beaching, BOPs)**
  - Sources already regulated
  - Government managing operations

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Additional Work Practices (Blast Furnace Bleeder &Bells, Beaching, BOPs)

Sources already regulated

- The category is already subject to robust operations and maintenance requirements in the existing MACT standard.
- Projected emissions reductions **do not account for** the fact that facilities **are already implementing work practices** similar to those being proposed: EPA is **double-counting work practices** that are already in place.
- EPA has determined that the source category is low risk and has AMOS - further demonstrating that lowering the existing opacity standards and requiring prescriptive work practices are not justified.
  - II&S facilities each have **unique design characteristics**; modeling potential emissions reduction estimates on a single facility leads to inaccurately high projections.
  - Projected emission reduction **estimates are inaccurately high** because proposed work practice requirements would not result in meaningful *additional* reductions.
- New proposed extensive work practice requirements are not justified as they may result in significant impacts to operations with no appreciable environmental benefit.

USEPA Proposed Rule: Iron and Steel NESHAP Review

Additional Work Practices (Blast Furnace Bleeder &Bells, Beaching, BOPs)

Government managing operations

- We are concerned with EPA setting **prescriptive** work practices **without the understanding and expertise** of what it takes to operate and maintain iron and steel facilities.

- The operations of a specific facility and safety standards impact the ability to commit to implementation of prescriptive work practices.

- Operators need **flexibility** to take appropriate action on a case-by-case basis.
  - **Operational modifications must be allowed to take place** at the time an operational issue arises; what works for a particular event **may not work** when applied during all future operations.
  - What works at one facility **may not be effective** at others.

- Some of the so-called work practice provisions are actually process equipment design requirements.

EXAMPLE - Requirement for Blast Furnace Bell Replacement

- We understand the proposal to be that a bell with any opacity (or opacity at 10% or more) is a violation requiring replacement of the multi-million dollar bell within 4 months (even though some emissions are expected from time to time during normal operations - which EPA has previously acknowledged in guidance and other materials.)
- *Low emissions: At most* there is a potential for less than 6.1 tpy industry-wide total HAP reduction.
- Repairs and replacements are high-cost capital projects.
- Prescriptive time-based requirements to replace small or large bells preclude intermittent operational adjustments to resolve issues and disregard the environmental performance of the bell top
    - Approximate time frame in practice for large bell changeouts ~ once per 5 years; small bells ~ once per 2-3 years. Significant costs for large bell replacements ~ $12M each with 5 large bells within only U. S. Steel. $12M does not include costs for lost iron/steel production associated with 15-45 day shutdown of operations needed for replacement.

EPA has determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks.

Problem with proposed regulation

- **Fenceline Monitoring for Total Chromium**
  - No correlation to risk
  - No recognition of off-site contributions
  - Implementation - Unanswered Questions

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Fenceline Monitoring of Total Chromium

No correlation to risk

- **Why chromium** - Chromium is not a pollutant of concern. The industry is unsure why EPA is monitoring this.
- **Hex Chrome low risk** - If EPA were to estimate hex chrome emissions based on a ratio of hex to chromium. EPA has long-term data from monitoring downwind of an iron and steel plant that shows that there is a max. 1% hex to total ratio. Supporting EPA's earlier finding of low risk.
    - >8 years of EPA ambient monitoring data + 6 months' of 2022 ICR results that demonstrated very low risk.
    - Low risk using conservative upper-end assumptions.
    - Confirms the low/acceptable risk in 2020 RTR Final Rule.
- **Low risk - High annual costs** - estimated costs will in the hundreds of thousands to the industry for monitoring annually

Is a fenceline monitoring requirement justified given USEPA's study and our six months of ICR fenceline monitoring data shows very low risk?

Fenceline Monitoring of Total Chromium

No recognition of off-site contributions

- USEPA current approach fails to consider off-site contributions – assumes all chromium coming from the iron and steel facilities

- Fenceline monitors tend to mislead public regarding actual risks. They overestimate concentrations attributable to II&S facilities.
  - Fenceline monitors nearest to sensitive receptors generally show lower estimated risks; other fenceline monitors not representative of risk at sensitive receptors.
  - Applicable speciation range of chromium, i.e., PM10 to PM ratio, is unknown, making estimated risk and potential reductions uncertain.
  - If the proposal includes monitoring of a proxy pollutant, does the proposal sufficiently explain the relationship of a proxy to a pollutant of concern to avoid public misconception of the raw proxy pollutant monitoring results?

Fenceline Monitoring of Total Chromium

Implementation - Unanswered Questions

- If not justified for risk purposes, then why do it? What is legal basis?
- If the industry nor EPA can pinpoint potential emissions sources and address those now, how will fenceline monitoring help?
- What is the period required to monitor? Is there a sunset on required monitoring?
- What is the connection of the fenceline monitoring results to any planned action level and any planned opacity and work practices standards?
- How a monitor trigger for chromium is correlated to the iron and steel operations considering non-iron and steel chromium impacts that occurred during the ICR fenceline monitoring.
    - Monitoring results triggering action would be problematic because a root-cause analysis may not lead to conclusive results (e.g., delays before receiving lab results on monitoring data make establishing any potential causal connection difficult).
    - There is no feasible analysis that can be completed to identify the specific chromium source, take corrective action to reduce the chromium, and then revise a work practice for continuous chromium reductions. Lab data is weeks behind any real-time event and will be nearly impossible to trace.

EPA has determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks.

Problem with proposed regulation

- **Lowering of Existing Opacity Limits**
  - Sources already regulated
  - Very low opacity limits - Not consistently achievable

Lowering of Existing Opacity Limites

Source already Regulated

"[T]here are **no developments** in practices, processes, and control technologies that warrant revisions to the MACT standards for this source category."
– EPA II&S RTR, 85 FR 42077 (July 13, 2020)

- The sources have existing federal and state/local opacity limits.
- While required by Section 112(d)(3) of the Clean Air Act, EPA has not shown that any technological advances have been made since the original MACT opacity value was set that would support a new lower opacity limit.
  - Furthermore, this "new" development is directly at odds from EPA's prior assessment completed during 2019-2020 for the existing rule. EPA completed a robust review and provided sound justification – along with considering its AMOS determination - in the July 19, 2019 proposed RTR rule. (See 84 Fed. Reg. 42704). EPA has not shown how the 2019 detailed analysis is incorrect
- EPA has not supported the proposed revisions with any necessary or appropriate risk reduction or statistical evaluation.

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Lowering of Existing Opacity Limites

Very low opacity limits – Not consistently achievable

- Reportedly, EPA considering ratcheting existing standards potentially to 400% more stringent levels as "never to be exceeded limits" *plus* adding prescriptive work practice requirement after noting that no §112(d)(6) "developments" have occurred.
- Any lower opacity requirements are not cost-effective.
- The limited dataset is not a reliable basis for lowering opacity limits
- Never-to-be-exceeded opacity limits are not being achieved by top performers.
- Some existing opacity standards are not consistently being met.
- Potential control options for Beyond-the-floor opacity standards would require complete enclosure of facilities; associated reconfiguration and controls results in *Exorbitant costs: on the order of $100M per source.*
- High compliance costs would have broad adverse economic effects

USEPA Proposed Rule: Iron and Steel NESHAP Review

Ask:

OMB refer proposed rule back to USEPA, in consideration of risk and consistency with Clean Air Act, to:

- Gather more data
- Review proposed standard for technical feasibility
- Review cost benefit analysis

At a minimum, solicit comments on alternative requirements (see appendix)

APPENDIX

I. FEEDBACK ON POTENTIAL NEW HAP LIMITS

In EPA's final July 2020 Integrated Iron and Steel Manufacturing rule, EPA determined that the Integrated Iron and Steel Manufacturing NESHAP Source Category presents low, acceptable risks. However, in April 2020, a ruling of the U.S. Court of Appeals for the District of Columbia Circuit in Louisiana Environmental Action Network (LEAN) v. EPA, the court found EPA must add emissions limits for unregulated HAPs emitted by a sector when it conducts a technology review of a NESHAP, required every eight years under the Clean Air Act.

- The integrated iron and steel industry is committed to working with the USEPA to develop and implement revisions to the Iron and Steel NESHAP which are based on sound science and data, have demonstrated benefits to the environment, and are technologically and economically feasible.
- EPA is expected to propose for the first-time emissions limits, MACT floors, for certain HAPs from integrated iron and steel plants that EPA would have considered "missing" from its initial air toxic regulations, specifically:
    - Mercury, Dioxin/Furans, PAHs, Carbonyl Sulfide, Carbon Disulfide, Hydrochloric Acid, and Hydrogen Fluoride from Sinter Plants.
    - Dioxin/Furans, Hydrochloric Acid, and Total Hydrocarbons from Blast Furnaces.
    - Dioxin/Furans, Hydrochloric Acid, and Total Hydrocarbons from Basic Oxygen Furnaces.
- The MACT floor is the minimum level of emissions reduction required under a NESHAP rule.
- The existing integrated iron and steel rule has particulate matter limits, mercury emission limits, oil content or VOC emission limits for sinter plants, opacity standards, operating and maintenance plan and preventative maintenance plan requirements for air pollution capture and control devices, performance testing requirements, parametric and other monitoring requirements, data collection and recordkeeping requirements, and reporting requirements for sinter plants, blast furnaces, and basic oxygen furnaces.

1. <u>Potential New HAP Limits.</u>

a. EPA has limited data i.e., less than 5 sources for each of the new 13 HAPs. In most cases, EPA has only one stack from two sources, which does not demonstrate the representativeness of the industry. It is only a snapshot that does not account for different processes and products. This data should not be relied upon to support the establishment of low limits.

b. EPA has not shown that the new standards are indeed achievable and maintainable by any source, let alone being representative of the purported five best performing sources.

c. Some of the data have orders of magnitude differences in testing results that need to be addressed in any proposed limit.

d. Currently there are no existing controls for the new HAPs EPA is proposing to set a floor standard.

e. There are also no demonstrated controls, that the industry is aware of, for many of the HAPs. Therefore, EPA's assessment is not that of the best *controlled* or best *performing* as required by CAA 112(d)(3).

f. Costs will be exorbitant - on the order of 100s of millions of dollars to the industry and controls will need to be developed and trialed - something clearly not contemplated by Congress in Section 112(d)(3), if achieving the limits is technologically feasible.

g. If developed controls did not perform as anticipated, facilities could face penalties associated with noncompliance.

2. <u>New HAP Limits Solicitation of Comment</u>

a. The EPA solicits comment on whether the data used to set the MACT floors is sufficient to account for different products and processes. The EPA solicits comments on whether the data are representative of the industry to be relied upon to support the establishment of new low HAP limits and is achievable and maintainable by the best performing sources.

b. The EPA solicits comment on whether more data should be collected from the industry to ensure the MACT floors account for variability and is representative of the industry to be relied upon to support the establishment of new low HAP limits. At a minimum, if either data from 5 different sources or data from 5 stack tests from sources with less than 5 sources across the industry, (i.e., sinter plants) should be used to set the floor.

c. The EPA solicits comment on whether EPA offers an averaging compliance alternative. These alternatives would include options for an integrated iron and steel facility to comply the new HAP emission limits.

d. The EPA solicits comment on whether the existing sinter plant oil content limit of the feedstock to the sinter plant and/or the VOC emission limit from the windbox exhaust stream are surrogates for the new dioxin/furans and PAH limits.

e. The EPA solicits comment on whether there are surrogates that are representative of any of the new HAP limits that are technologically and economically more efficient to monitor and control.

h. The EPA solicits comment to identify if there are any feasible existing demonstrated add-on controls in practice that can be implemented to comply with the new HAP limits.

i. The EPA solicits comment on the costs for the installation and operation of any feasible controls that can be installed to comply with the new HAP limits.

j. The EPA solicits comment on whether add-on controls are necessary to comply with the new HAP limits will need to be developed and trialed and the estimated length of time and costs necessary for their development.

k. The EPA solicits comment on the expected HAP emission reductions of any technologically feasible add-on controls.

April 12, 2023

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.

f. Costs will be exorbitant - on the order of 100s of millions of dollars to the industry and controls will need to be developed and trialed - something clearly not contemplated by Congress in Section 112(d)(3), if achieving the limits is technologically feasible.

g. If developed controls did not perform as anticipated, facilities could face penalties associated with noncompliance.

2. <u>New HAP Limits Solicitation of Comment</u>

a. The EPA solicits comment on whether the data used to set the MACT floors is sufficient to account for different products and processes. The EPA solicits comments on whether the data are representative of the industry to be relied upon to support the establishment of new low HAP limits and is achievable and maintainable by the best performing sources.

b. The EPA solicits comment on whether more data should be collected from the industry to ensure the MACT floors account for variability and is representative of the industry to be relied upon to support the establishment of new low HAP limits. At a minimum, if either data from 5 different sources or data from 5 stack tests from sources with less than 5 sources across the industry, (i.e., sinter plants) should be used to set the floor.

c. The EPA solicits comment on whether EPA offers an averaging compliance alternative. These alternatives would include options for an integrated iron and steel facility to comply the new HAP emission limits.

d. The EPA solicits comment on whether the existing sinter plant oil content limit of the feedstock to the sinter plant and/or the VOC emission limit from the windbox exhaust stream are surrogates for the new dioxin/furans and PAH limits.

e. The EPA solicits comment on whether there are surrogates that are representative of any of the new HAP limits that are technologically and economically more efficient to monitor and control.

h. The EPA solicits comment to identify if there are any feasible existing demonstrated add-on controls in practice that can be implemented to comply with the new HAP limits.

i. The EPA solicits comment on the costs for the installation and operation of any feasible controls that can be installed to comply with the new HAP limits.

j. The EPA solicits comment on whether add-on controls are necessary to comply with the new HAP limits will need to be developed and trialed and the estimated length of time and costs necessary for their development.

k. The EPA solicits comment on the expected HAP emission reductions of any technologically feasible add-on controls.