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**Re: Steel Associations' Position on, Proposed Approach for, and Responses to the U.S. Environmental Protection Agency's Questions Regarding, the Agency's Review of the August 25, 2023 and February 14, 2024 Revisions to the New Source Performance Standards Review for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels**

Dear Ms. Tardif and Mr. Mulrine:

The Steel Associations<sup>1</sup> appreciated the U.S. Environmental Protection Agency's ("EPA's" or "the Agency's") willingness to discuss the Agency's reconsideration of the revised New Source Performance Standards ("NSPS") for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels that EPA promulgated on August 25, 2023 ("2023 NSPS Revisions"), and the February 14, 2024 Interim Final Rule ("2024 IFR")<sup>2</sup> making further changes to certain aspects of the 2023 NSPS Revisions (collectively, "NSPS Revisions").<sup>3</sup> Consistent with those discussions, this letter provides the Steel Associations' position on and proposed approach to the Agency's review of the NSPS Revisions as well as responses to various items raised by EPA in the course of our initial discussions.

The Steel Associations intend that this letter help reinstate a more extensive and ongoing dialogue regarding EPA's review of the NSPS Revisions. In particular, the Steel Associations wish to more meaningfully engage with EPA on an approach to the Agency's review of the NSPS Revisions that would allow EPA to most effectively and efficiently address those aspects of the revisions that are infeasible, insufficiently supported, unclear, or otherwise inconsistent with the Agency's authority under the Clean Air Act ("CAA").

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<sup>1</sup> The American Iron and Steel Institute ("AISI"), the Steel Manufacturers Association ("SMA"), and the Specialty Steel Industry of North America ("SSINA") (collectively, "the Steel Associations").

<sup>2</sup> 89 Fed. Reg. 11,198 (Feb. 14, 2024).

<sup>3</sup> 88 Fed. Reg. 58,442 (Aug. 25, 2023).

As such, in Section I of this letter, the Steel Associations outline an approach for reviewing and modifying the NSPS Revisions that we believe will allow EPA to efficiently and effectively address the challenged aspects of the 2023 NSPS Revisions and 2024 IFR. In Sections II and III of this letter, the Steel Associations identify those aspects of the NSPS Revisions determined to be inconsistent with EPA’s statutory authority, insufficiently supported, unnecessarily confusing or burdensome, or otherwise unwarranted. It is our hope that by proceeding in this manner, we will be able to expeditiously address the issues raised by the Steel Associations in our two petitions for reconsideration and therefore cooperatively resolve our lawsuit in the U.S. Court of Appeals for the District of Columbia Circuit (“D.C. Circuit”)<sup>4</sup> without the need for extensive briefing or argument.

Finally, in Section IV of this letter, we respond to each of the questions EPA has presented to the Steel Associations in the course of EPA’s reconsideration proceedings. While we welcome the opportunity to herein respond to EPA’s questions, these responses should not be viewed as reflecting the Steel Associations’ acquiescence to any aspect of the NSPS Revisions discussed in our responses. In fact, Steel Associations do not waive, and expressly preserve, each issue we identified in our October 24, 2023 Petition for Reconsideration, our April 15, 2024 Petition for Partial Reconsideration of the 2024 IRF, and in the Statement of Issues the Steel Associations filed on November 27, 2023 in *American Iron and Steel Institute, et al., v. EPA, et al.*<sup>5</sup>

## **I. PROPOSED APPROACH TO REVIEWING AND REVISING THE NSPS REVISIONS**

EPA’s NSPS Revisions consisted of two categories of regulatory changes: (1) those that applied to new, reconstructed, and modified sources; and (2) those that were imposed on existing sources. These distinct and severable parts of the NSPS Revisions were challenged for different reasons, have different impacts on the Steel Associations’ members, and will require different levels of Agency review to address those challenges and impacts. Therefore, as discussed further below, the Steel Associations believe that it will be more efficient and effective for EPA to address these two categories of regulatory changes in two different but concurrent actions.

The new NSPS subpart (“Subpart AAb”) that EPA added in the 2023 NSPS Revisions is applicable to EAF steel manufacturing facilities constructed, reconstructed, or modified on or after May 16, 2022.<sup>6</sup> As discussed in the Steel Associations’ Petition for Reconsideration of the 2023 NSPS Revisions, Petition for Partial Reconsideration of the 2024 IFR, and multiple comment letters and discussions with EPA, many of these new Subpart AAb requirements were unsupported and therefore impermissible. Importantly, the Steel Associations provided objective and concrete data fully supporting our concerns with Subpart AAb, including information in the Agency’s rulemaking docket for the NSPS Revisions as well as EPA’s own analyses and previous conclusions on technological feasibility, compliance costs, potential emissions avoided, and employee health and safety concerns. Our legal challenges and Agency engagement reflect our belief that EPA either disregarded or insufficiently considered the data and analyses.

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<sup>4</sup> *American Iron and Steel Institute, et al., v. EPA, et al.*, No. 23-1292 (D.C. Cir. filed Oct. 24, 2023).

<sup>5</sup> 23-1292 (D.C. Cir. filed Oct. 24, 2023).

<sup>6</sup> 88 Fed. Reg. 58,442 (Aug. 25, 2023); EPA Docket ID No. EPA–HQ–OAR–2002–0049.

In addition to Subpart AAb's impermissible new standards and requirements, the Agency's 2023 NSPS Revisions and 2024 IFR substantially revised existing NSPS Subparts AA or AAa, which apply to facilities that have not been constructed, reconstructed, or modified on or after the May 16, 2022 applicability date for EPA's 2023 NSPS Revisions. While some of these revisions to Subparts AA or AAa were likely intended to clarify or correct regulatory text, in many respects, these Subpart AA/AAa revisions unlawfully impose costly, infeasible, and fundamentally different new requirements on owners and operators of sources that have not triggered the applicability of new NSPS provisions by constructing, reconstructing, or modifying their affected facilities. Accordingly, as discussed in Subsection II.b that follows, these changes to Subparts AA and AAa are the product of impermissible, retroactive rulemaking that is wholly inconsistent with the CAA, multiple court decisions interpreting the Act, and EPA's long-standing implementation of CAA Section 111 generally and with respect to the EAF/AOD NSPS specifically.

Given the clear distinction between: (1) the Subpart AAb requirements that the Steel Associations have challenged as unsupported and therefore impermissible; and (2) the new Subpart AA and AAa requirements and compliance obligations that the Steel Associations have challenged as impermissible retroactive rulemaking applicable to existing facilities that are not newly constructed, reconstructed, or modified; the Steel Associations believe it would be most efficient for EPA to address the infeasible/unlawful aspects of Subpart AAb and Subparts AA/AAa separately and formally in the following manner:

- Subpart AA/AAa: Issue an interim final rule to immediately rescind or expeditiously propose and finalize a rule to rescind all of the revisions to Subparts AA and AAa that the Agency imposed in the 2023 NSPS Revisions and the 2024 IFR.
- Subpart AAb: Concurrent with the Agency's rescission of its 2023/2024 revisions to Subparts AA and AAa, EPA should stay the effectiveness of Subpart AAb or at least those aspects of Subpart AAb that the Steel Associations have credibly shown to be impermissible and/or infeasible. While the administrative stay is in place, EPA should then undertake a rulemaking to promulgate revisions to those aspects of Subpart AAb that are insufficiently supported, infeasible, or otherwise impermissible; or to entirely repeal and replace Subpart AAb. As an alternative to an administrative stay, EPA could expeditiously promulgate a rule to fully rescind Subpart AAb and then initiate an entirely new rulemaking to promulgate a lawful and feasible replacement to Subpart AAb.

In the subsections that follow, the Steel Associations provide additional information about both of these proposed steps for addressing the unlawful aspects of the NSPS Revisions. By proceeding in the manner proposed herein, EPA will be able to alleviate the significant burdens associated with the Steel Associations' members' obligation to comply with aspects of the NSPS revisions that are infeasible or impermissible. The Steel Associations also believe that the efficiencies created by this proposed approach can help put the Agency in a position to fully address all infeasible and impermissible aspects of the NSPS Revisions within 12 to 18 months. Thus, we are hopeful that this proposed approach can put the parties on a path to quickly and amicably resolving the Steel Associations' lawsuit in the D.C. Circuit as soon as possible.

## **II. RESCIND ALL REVISIONS AND NEW REQUIREMENTS TO EXISTING NSPS SUBPARTS AA AND AAa THAT EPA RETROACTIVELY IMPOSED THROUGH THE NSPS REVISIONS**

### **a. Proposed Process for Rescinding Revisions to Existing NSPS Subparts**

EPA can and should quickly issue a rule rescinding all of the revisions to Subparts AA and AAa that the Agency imposed in the 2023 NSPS Revisions and the 2024 IFR. Scores of existing sources are currently subject to these burdensome and impermissible new compliance requirements even though they have not triggered the NSPS by constructing, reconstructing, or modifying their affected facilities. As discussed in Subsection II.b., these revisions to existing Subparts AA and AAa were the product of retroactive rulemaking and therefore must be rescinded in their entirety. Because these Subpart AA/AAa revisions were unlawfully promulgated in the first instance, we believe that EPA can immediately rescind these revisions without prior notice or opportunity for public comment using the Administrative Procedure Act (“APA”) Section 553(b) “good cause” exemption that applies “when the agency for good cause finds . . . that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest.”

Even if EPA does not utilize the APA’s “good cause” exemption, the Agency can and should quickly rescind all of the Subpart AA/AAa revisions through a separate rulemaking with a comment period of no more than 30 days. This comment period is more than sufficient because EPA does not need to develop and take comment on an extensive administrative record for each of the Subpart AA/AAa revisions it proposes to rescind. Rather, EPA can and should base these Subpart AA/AAa rescissions on the commonsense and statutorily mandated recognition that the Agency can only impose the CAA’s “new source performance standards” on “new sources;” that is, sources that construct, reconstruct, or modify their affected facilities on or after the effective date for a new or revised NSPS. The Steel Associations summarize the legal justification for this commonsense rescission in Subsection II.b. that follows.

By quickly and comprehensively addressing the unlawful existing NSPS subpart revisions through an individual IFR or expedited notice-and-comment rulemaking, EPA can provide relief to sources subject to existing Subparts AA and AAa more quickly than would be possible if the Subpart AA/AAa rescissions were promulgated jointly with Subpart AAb changes that will necessarily require a more extensive and time-consuming consideration of the administrative record. Separating the necessary Subpart AA/AAa rescissions from the reconsidered aspects of Subpart AAb will also allow EPA and the Steel Associations to focus their discussions on the specific and distinct Subpart AAb provisions that the Steel Associations have identified as insufficiently supported or otherwise unlawful.

### **b. Need and Justification for Rescinding all Revisions and New Requirements EPA Imposed on Sources Subject to Existing Subparts**

As previously noted, EPA’s NSPS Revisions imposed several new requirements on owners and operators of existing sources subject to Subparts AA or AAa that are neither modified nor reconstructed on or after the date of EPA’s Proposed NSPS Revisions (May 16, 2022). For those

sources constructed, modified, or reconstructed on or after October 21, 1974 but before May 16, 2022, EPA's NSPS Revisions would impermissibly impose on owners and operators costly, burdensome, and different or new standards and requirements, including but not limited to: (1) a new monthly building inspection requirement; (2) a requirement to significantly increase monitoring frequency for certain control device operating parameters and install entirely new monitoring equipment if existing equipment is not compatible with the new monitoring frequencies; (3) a new and unexplained requirement that sources with multiple EAFs conduct weekly visible emission observations for the entire duration of a furnace heat cycle; (4) a new requirement to electronically report certain information to EPA that is needlessly duplicative of existing requirements to report information to the state agencies that actually issue and oversee the Steel Associations' members' air permits; and, (5) specification of the Digital Camera Opacity Technique ("DCOT") as a new industry-wide alternative compliance measurement option.

These changes to Subparts AA and AAa represented unlawful retroactive rulemaking that contravenes the CAA, multiple court decisions interpreting the Act, and EPA's long-standing implementation of CAA Section 111 generally and with respect to the EAF NSPS specifically. The Steel Associations therefore believe that EPA must rescind all of the NSPS Revisions' new retroactive requirements on sources that have not been constructed, modified, or reconstructed on or after May 16, 2022.

One of the fundamental principles of administrative rulemaking is that "retroactivity is not favored in the law."<sup>7</sup> In the administrative context, a rule is retroactive if it "takes away or impairs vested rights acquired under existing law, or creates a new obligation, imposes a new duty, or attaches a new disability in respect to transactions or considerations already past."<sup>8</sup> Similarly, if a new rule is "substantively inconsistent" with a prior agency practice and attaches new legal consequences to events completed before its enactment, it operates retroactively.<sup>9</sup> Consequently, "[a]n agency may not promulgate retroactive rules absent express congressional authority."<sup>10</sup> Such an express authorization to promulgate retroactive rules is entirely absent from the CAA; no provision in the CAA allows EPA to issue any kind of rule with retroactive effect.<sup>11</sup> And, to the contrary, the provision of the CAA at issue here (Section 111) expressly precludes the retroactive imposition of new regulatory requirements on facilities unless they are new, reconstructed, or modified.

The Congressional grant of authority under the CAA for the initial promulgation of a NSPS states in pertinent part: "the Administrator shall publish proposed regulations, establishing Federal standards of performance for *new* sources within such category."<sup>12</sup> The term "standard

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<sup>7</sup> *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988).

<sup>8</sup> *Nat'l Mining Ass'n v. United States Dep't of Interior*, 177 F.3d 1, 8 (D.C. Cir. 1999) (quoting *Ass'n of Accredited Cosmetology Sch. v. Alexander*, 979 F.2d 859, 864 (D.C. Cir. 1992)).

<sup>9</sup> *Nat'l Mining Ass'n v. Dep't of Labor*, 292 F.3d 849, 860 (D.C. Cir. 2002).

<sup>10</sup> *Nat'l Min. Ass'n v. Dep't of Labor*, 292 F.3d 849, 859 (D.C. Cir. 2002) (citing *Bowen*, 488 U.S. at 208).

<sup>11</sup> See *Sierra Club v. Whitman*, 285 F.3d 63, 68 (D.C. Cir. 2002) ("The relevant provisions of the Clean Air Act contain no language suggesting that Congress intended to give EPA the unusual ability to implement rules retroactively.").

<sup>12</sup> 42 U.S.C. § 7411(b)(1)(B)(emphasis added).

of performance” is a defined term and authorizes EPA to establish a “standard for emissions of air pollutants which reflects the degree of emission limitation achievable ...”<sup>13</sup>

Furthermore, the term “emission limitation,” included within the term “standard of performance,” is defined to include a limit on the rate of emissions, as well as “any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or *operational standard* promulgated under this chapter.”<sup>14</sup> Therefore, the “standard of performance” that EPA is authorized to promulgate under Section 111 includes not only the limit on the rate of emissions, but also broadly encompasses all other operational and associated restrictions, including monitoring requirements.<sup>15</sup>

Notwithstanding the broad scope of the statutory term “standard of performance,” Section 111 overall is significantly limited in its applicability. The “standard of performance” applies only to “new sources.” The term “new source” is statutorily defined to limit applicability of the standards to only those stationary sources that were constructed or modified after the date of publication of proposed regulations.<sup>16</sup> An existing source is modified due to a physical or operational change which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies, subject to various regulatory exemptions.<sup>17</sup>

The Congressional grant of authority under the CAA for the *revision* of a NSPS simply refers back to the grant of authority for a new NSPS, stating that “the Administrator shall, at least every 8 years, review and, if appropriate, revise such standards *following the procedure required by this subsection for promulgation of such standards.*”<sup>18</sup> Therefore, not only is the initial promulgation of a performance standard limited to “new sources,” but revisions of performance standards are also limited to “new sources.” As previously noted, performance standards include not just the limit on the rate of emissions but also operational restrictions and monitoring requirements.

This analysis of CAA Section 111 is succinctly summarized as follows:

- A “standard of performance” is only applicable to a “new source.”
- A revised “standard of performance,” is also only applicable to a “new source.”
- The term “standard of performance” is defined to include the term “emission limitation.”
- The term “emission limitation” is defined to include any requirement related to the operation of the source, which would include monitoring requirements.

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<sup>13</sup> 42 U.S.C. § 7411(a)(1).

<sup>14</sup> 42 U.S.C. § 7602(k) (emphasis added).

<sup>15</sup> See e.g., *Sierra Club v. EPA*, 551 F.3d 1019, 1027 (D.C. Cir. 2008) (noting that the phrase “any requirement relating to the operation or maintenance of a source” is a broad phrase).

<sup>16</sup> 42 U.S.C. § 7411(a)(2).

<sup>17</sup> 40 C.F.R. §§ 60.2, 60.14.

<sup>18</sup> 42 U.S.C. § 7411(b)(1)(B) (emphasis added).

- New monitoring and other operational requirements are thus encompassed within the “standards of performance” that EPA can only impose on “new sources,” regardless of whether the Agency does do for the first time or through subsequent revision.

This focus on new sources of pollution is a purposeful and fundamental paradigm of Section 111. Congress enacted Section 111 and initially limited its applicability to “new sources” based on the pragmatic view that “[b]uilding control technology into new plants at time of construction will plainly be less costly than requiring retrofit when pollution control ceilings are reached.”<sup>19</sup> And when Congress amended Section 111(b) in 1977 to include the requirement that EPA periodically review and revise NSPS, the only rationale and explanation that Congress provided for the change was “the need to require periodic review and revision of new source standards of performance on a prospective basis.”<sup>20</sup>

While this provision allowed EPA to impose standards of performance on existing sources, Congress only allowed these standards to be imposed when the source would undergo a level of modification that made it less like an existing source for which the requirement to impose new air pollution control equipment is more disruptive and costly, and more like a new source that is amenable to efficient pre-construction design and incorporation of air pollution controls. In other words, Congress purposely selected this forward-looking approach to ensure that new pollution control measures can be efficiently and effectively implemented as part of those modification activities that are substantial enough to trigger the applicability of a new NSPS subpart.<sup>21</sup>

The clear and purposeful limits Congress imposed on EPA’s Section 111 authority are also plainly apparent when contrasted with the Agency’s authority to set national emissions standards for hazardous air pollutants (“NESHAP”) under Section 112. EPA’s standard-setting authority under Section 112 applies to “each category or subcategory of major sources and area sources of hazardous air pollutants.”<sup>22</sup> There is no limitation to only “new sources.” In the same manner, EPA’s authority to revise a NESHAP is equally untethered by a “new source” restriction, stating only that “the Administrator shall review, and revise as necessary ... emission standards promulgated under this section no less often than every 8 years.”<sup>23</sup> Congress therefore provided EPA with the ability to revise NESHAPs applicable to existing sources. Congress did not provide EPA with that authority for revisions to an NSPS. It is a well-established canon of statutory construction that Congress’ inclusion of a grant in one place and exclusion of such grant elsewhere is intentional and must be given effect.<sup>24</sup> As such, revisions to a NSPS cannot apply to existing sources.

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<sup>19</sup> H.R. Rep. No. 294, 95th Cong., 1st Sess. 185, reprinted in 1977 U.S. Code Cong. & Admin. News at 1264.

<sup>20</sup> H.R. Rep. No. 294, 95th Cong., 1st Sess. 187 (1977) (emphasis added).

<sup>21</sup> *National-Southwire Aluminum Co. v. EPA.*, 838 F.2d. 835, 843 (6th Cir. 1988) (J. Boggs, dissenting), *citing* 116 Cong. Rec. 32,918 (remarks of Sen. Cooper), reprinted in 1 *Senate Committee on Public Works, A Legislative History of the Clean Air Act Amendments of 1970* (1974), at 260.

<sup>22</sup> 42 U.S.C. § 7412(d)(1).

<sup>23</sup> 42 U.S.C. § 7412(d)(6).

<sup>24</sup> *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993) (quoting *Russello v. United States*, 464 U.S. 16, 23 (1983)) (“where Congress includes particular language in one section of a statute but omits it in another ..., it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.”)

The substantive new obligations and requirements that EPA imposed on existing sources that have not been reconstructed or modified plainly constitute unlawful retroactive rulemaking that is wholly inconsistent with the text and framework Congress provided in Section 111 of the CAA. Even if the CAA permitted EPA to retroactively impose new compliance obligations on existing sources (which it does not), the changes to Subparts AA and AAa that EPA enacted through the NSPS revisions remain impermissible. Nowhere in the rulemaking record for the NSPS Revisions did EPA provide support for or even reasonably explain these substantive and onerous changes. EPA simply (and incorrectly) characterized these new retroactive obligations as “clarifications,” and therefore assumed (erroneously) that there were no costs associated with these new requirements. But these retroactively imposed new compliance obligations are, in fact, costly and burdensome.

Furthermore, even if EPA initially believed it had discretion to interpret CAA Section 111 to permit retroactive revision of existing NSPS subparts, the Agency cannot now maintain that position in the wake of the U.S. Supreme Court’s (“Supreme Court’s” or “the Court’s”) decision in *Loper Bright Enterprises v. Raimondo*.<sup>25</sup> In its June 28, 2024 *Loper Bright* decision, the Supreme Court overturned its long-standing “*Chevron Doctrine*,” which required courts to afford special deference to a federal administrative agency’s interpretation of its governing statutes. While the *Loper Bright* decision allows courts to afford “respect” to agencies’ factual and technical determinations, it requires courts to consider questions of law *de novo* and exercise independent judgement to determine the “single, best meaning” of a statutory provision.<sup>26</sup>

This doctrinal change means that courts will no longer defer to agency interpretations simply because they are permissible constructions of a statute. When courts have cases challenging agencies’ interpretations of their governing statutes, they must now set aside any agency rule, policy or other directive that is based on an interpretation that does not reflect the “single, best meaning” of a statute.

Suffice it to say that interpreting the CAA’s “new source performance standard” provisions as allowing EPA to revise existing NSPS subparts to impose costly new compliance obligations on owners and operators that do not operate “new sources” is not the “single, best interpretation of CAA Section 111.”<sup>27</sup> The Steel Associations therefore respectfully request that EPA, through an

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<sup>25</sup> 603 U.S. \_\_ (2024); 144 S. Ct. 2244 (2024).

<sup>26</sup> *Loper Bright* 144 S. Ct. at 2266 (citing *Wisconsin Central Ltd. v. U.S.*, 585 U. S. 274, 284 (2018)).

<sup>27</sup> In fact, prior to the Agency’s most recent revisions to Subparts AA and AAa, EPA’s past guidance, determinations, and practice all correctly understood that the Agency’s authority under Section 111(b) did not include any authority to revise existing NSPS standards in any way that would increase compliance obligations or functionally tighten standards for any source that had already commenced construction. From the very first time that EPA proposed any NSPS standards, EPA has consistently held the position that revisions cannot retroactively increase compliance requirements. As EPA stated in the background document for the first NSPS standards for Electric Arc Furnaces in 1974, “[r]evisions will be proposed and promulgated as necessary to assure that the standards continue to reflect the best systems that will become available in the future. Such revisions will not be retroactive but will apply to stationary sources constructed or modified after proposal of the revised standards.” (Background information for Standards of Performance: Electric Arc Furnaces in the Steel Industry, Volume 1: Proposed Standards, EPA-450/2-74-017a (Oct. 1974), at xvi-xvii.) EPA then reiterated this exact same interpretation when preparing to promulgate the revised Subpart AAa standards. (EPA, Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Industry - Background Information for Proposed Revisions to Standards,

IFR or expeditiously conducted rulemaking proceedings, quickly rescind all of the NSPS Revisions' new retroactive requirements on sources that have not been constructed, modified, or reconstructed on or after May 16, 2022.

### III. SUBPART AAb RECISSIONS AND REVISIONS

#### a. Proposed Process for Addressing Infeasible and Impermissible Aspects of Subpart AAb

In addition to addressing the Subpart AA/AAa rescission and Subpart AAb regulatory changes through separate actions, the Steel Associations respectfully request that EPA administratively stay the effect of Subpart AAb while the Agency promulgates regulatory changes to the Subpart AAb provisions that the Steel Associations previously identified and summarize in Subsection III.b. An administrative stay is necessary and appropriate for the entirety of Subpart AAb given the widespread flaws and errors credibly raised by the Steel Associations in comments, petitions, and other communications with the Agency.

EPA has authority under Section 705 of the APA<sup>28</sup> to issue an administrative stay of Subpart AAb pending resolution of the Steel Associations' D.C. Circuit challenge that has been held in abeyance to allow EPA and the Steel Associations the opportunity to administratively resolve issues related to the NSPS Revisions. Indeed, a stay under APA Section 705 may be issued by EPA while judicial review is pending if "justice so requires," which is sufficiently demonstrated when the party filing the petition for review is likely to succeed on the merits, the party will incur irreparable harm without a stay, other parties will not be harmed by staying the rule, and it is in the public interest to stay the effective date of the rule.<sup>29</sup> Moreover, even apart from the APA's authority for stays tied to judicial review, EPA also has inherent authority to change the effective dates of regulations based on the same statutory authority used to set effective dates in the first place.

Justice requires a stay here. In the detailed discussions that follow in Subsection III.b. below, the Steel Associations describe multiple aspects of Subpart AAb that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with"<sup>30</sup> the CAA. The Steel Associations' members will be irreparably harmed absent a stay because Subpart AAb imposes on all new, reconstructed, and modified sources opacity limits that have never been consistently achieved in practice and cannot be reliably complied with. A stay is also justified by Subpart AAb's numerous costly new compliance obligations, many of which are so unclear and contradictory that sources cannot even reasonably discern how to comply with them.

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Preliminary Draft, at 2-11 (June 1982) ("Revisions are made to ensure that the standards continue to reflect the best systems that become available in the future. Such revisions will not be retroactive but will apply to stationary sources constructed or modified after the proposal of the revised standards.")). Although EPA has amended AA and AAa in the past, all such amendments have added alternatives and compliance flexibility, not added or augmented any requirements.

<sup>28</sup> 5 U.S.C. § 705.

<sup>29</sup> See, e.g., *Sierra Club v. Jackson*, 833 F. Supp. 2d 11, 31 (D.D.C. 2012) (recounting court precedent and EPA decisions to apply these four factors when evaluating a stay under the APA).

<sup>30</sup> 5 U.S.C. § 706(2)(A).

No party will be harmed by staying Subpart AAb because EPA’s own analysis acknowledges that there are no pollutant reductions associated with any aspect of Subpart AAb except for the extremely modest, unsupported, and cost-ineffective emission reductions EPA associated with the new shop opacity limits. And though the Steel Associations believe that the Agency significantly overestimated the PM reductions and substantially underestimated the costs associated with the new Subpart AAb shop opacity standard, it is noteworthy that even EPA projects that the costly standard will result in little if any industry-wide PM<sub>2.5</sub> reductions over the time period likely necessary for an administrative stay.<sup>31</sup>

**b. Need and Justification for Rescinding or Revising Provisions of Subpart AAb**

The Steel Associations herein briefly summarize the main aspects of Subpart AAb that we believe EPA must rescind or substantially revise. Each of these issues is described in detail in the Steel Associations’ various comments, petitions, and communications with EPA. These infeasible, insufficiently supported, and otherwise unlawful provisions not only demonstrate that EPA must take action on Subpart AAb, but that the Agency must also stay the effect of Subpart AAb while it addresses these significant legal and technical issues.

1. Subpart AAb: Rescind the Unsupported and Unlawful Zero Percent Shop Opacity Standard

In the 2023 NSPS Revisions, EPA adopted a new bifurcated opacity standard under Subpart AAb that imposes a zero percent shop opacity limit during melting and refining and a six percent opacity limit during charging and tapping.<sup>32</sup> This zero percent shop opacity limit, in addition to being impractical and unnecessary, does not reflect the “best system of emission reduction ... adequately demonstrated” (“BSER”) and is instead based on a limited data set that is not representative of long-term compliance performance. Nearly all of EPA’s supporting data come from individual facility performance tests, the limited duration of which fail to account for short-term variations in operations or atmospheric conditions that render continuous compliance with a zero percent opacity standard at all times wholly unrealistic for even the most modern and well-controlled sources. Moreover, all of the facilities that EPA identified as supporting a zero percent shop opacity standard either have other performance test or Method 9 data showing numerous instances of non-zero opacity. In fact, more than half of the facilities in the Agency’s data set were unable to achieve 0.000 percent shop opacity even during the short duration of the performance test.

In addition to being unsupported, a zero percent shop opacity standard is impractical and unnecessary. Opacity is a surrogate measure for assessing, indirectly, PM reductions. However, EPA never even attempted to show in its NSPS Revisions that reducing shop opacity from the current six percent limit to the proposed zero percent would potentially result in anything more than marginal PM reductions .

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<sup>31</sup> For instance, EPA assumes that the Subpart AAb shop opacity standard may reduce PM<sub>2.5</sub> by 2.8 tons in 2023 and 5.6 tons in 2024. Economic Impact Analysis for the Final Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels (July 2023) (Docket ID: EPA-HQ-OAR-2002-0049-0159) at p. 2-18, Table 2-9.

<sup>32</sup> 40 C.F.R. § 60.274b(a)(3).

Even if EPA's data set could be credibly construed as demonstrating that EAF producers could consistently maintain long-term compliance with a zero percent shop opacity standard (which the data does not support), the Agency had no rational basis to conclude, as the CAA requires, that new canopy hooding is a system of emission reduction that would allow companies to reliably and consistently achieve this unprecedented (and unnecessary) standard. In fact, EPA's own rulemaking record demonstrates that no source has ever continuously achieved zero percent shop opacity through exclusive reliance on a partial roof canopy, and that the only source with a continuous zero percent shop opacity limit in their permit was subject to much more comprehensive meltshop enclosure and control requirements and has since had that continuous zero percent opacity limit eliminated from its permit. On this fact alone, EPA is compelled to rescind the zero percent opacity standard.

In addition, EPA also ignored critical issues with its presumptions about the widespread feasibility of installing or utilizing canopy hoods, including that many sources cannot use or substantially modify such canopies due to interference with the movement of overhead gantry cranes. EPA also ignored statutorily mandated considerations of the non-air-quality health impacts of the NSPS Revisions' zero percent shop opacity limit. These non-air-quality health impacts include health concerns with worker heat stress and safety concerns related to reduced visibility within the meltshop, that were *outcome-determinative* in the prior revision of the EAF NSPS standard (Subpart AAa).

EPA simply and unreasonably presumed that all new, modified, and reconstructed facilities will be able to comply with the proposed zero percent shop opacity standard by installing a partial roof canopy at an unrealistically modest cost. But even accepting all of EPA's various unsupported control and cost assumptions, the NSPS Revision's new Subpart AAb bifurcated 0/6% shop opacity limit remains incredibly cost-ineffective. As the Agency explained in the preamble to the 2023 NSPS Revisions, CAA Section 111 requires EPA to consider control costs to ensure that they are "reasonable" in light of the pollutant reductions they are expected to deliver.<sup>33</sup> Thus, "[i]n the context of air pollution control options, cost effectiveness typically refers to the annualized cost of implementing an air pollution control option divided by the amount of pollutant reductions realized annually."<sup>34</sup>

Determining the PM reductions that will be "realized" annually from Subpart AAb's bifurcated 0/6% shop opacity limit therefore required EPA to compare the baseline shop opacity levels that EPA calculated from performance test reports for 30 EAF meltshops (0.14% average)<sup>35</sup> to the 0/6% shop opacity limit newly promulgated in the 2023 NSPS Revisions.<sup>36</sup> As reflected in Table

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<sup>33</sup> 88 Fed. Reg. at 58,444.

<sup>34</sup> 88 Fed. Reg. at 58,444 (emphasis added).

<sup>35</sup> Memorandum from Donna Lee Jones, EPA, to Electric Arc Furnace NSPS Technology Review Project File: *Cost Analyses to Determine BSEF for PM Emissions and Opacity from EAF Facilities* at 28, Table 5 (May 1, 2023). ("Emissions Memorandum").

<sup>36</sup> The 0.14 percent average opacity EPA calculated is broadly consistent with the Associations' members experience and at the heart of our concerns with the 0/6% shop opacity standard and its lack of necessity. Most facilities meet zero percent opacity most of the time, but we have serious concerns about the technological feasibility (and cost) of a standard that requires all new, modified, and reconstructed facilities to achieve zero percent opacity throughout the entirety of the melting and refining period. In assessing whether a standard is achievable, EPA

3 below, applying that reasonable and statutorily mandated analysis demonstrates that the Subpart AAb shop opacity limit is incredibly cost-ineffective, incompatible with the Agency’s belief that “controls more costly than \$15,000 per ton may not be cost-effective,”<sup>37</sup> and strikingly inconsistent with EPA’s cost-effectiveness determinations in other rules.<sup>38</sup>

Facility Size	EPA’s Total Annualized Cost Assumptions for Opacity BSER (Cost Memo at p. 11, table 2) <sup>39</sup>	PM reductions from 0.14% to 0/6% (Emissions Memo at p. 22.)	Cost Effectiveness (\$/t of PM reduction)
Small	\$85,716	4.9 tpy	\$17,493
Medium	\$1,135,153	14 tpy	\$81,082
Large	\$5,654,153	32 tpy	\$176,692

2. Subpart AAb: Rescind the Unsupported and Impermissible 0.16 lb/ton Production-Based Limit for Emissions of Particulate Matter (“PM”)

In the 2023 NSPS Revisions, EPA, in Subpart AAb, replaced the EAF NSPS’s longstanding 0.0052 grains per dry standard cubic foot (“gr/dscf”) stack limit for filterable PM with a 0.16 lb/ton production-based limit.<sup>40</sup> This change was insufficiently supported or justified, and therefore unlawful.

PM control at EAF meltshops, including from the affected sources (EAFs/AODs), is via baghouses or fabric filters. Meltshop air is evacuated to one or more baghouses in order to not

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must account for routine operating variability associated with performance of the system on whose performance the standard is based. *National Lime Ass’n v. EPA*, 627 F.2d 416, 431-433 (D.C. Cir. 1980). The Agency has the burden of showing how the standard is achievable under the range of relevant conditions that may affect the emissions to be regulated anywhere in the country. *National Lime Ass’n v. EPA*, 627 F.2d at 433. BSER limitations must be capable of being met on a constant, rather than an averaging, basis.<sup>36</sup> *National Lime Ass’n v. EPA*, 627 F.2d at 433-434.

<sup>37</sup> The Benefits and Costs of the Clean Air Act from 1990 to 2020 (April 2011) (Report available at [https://www.epa.gov/sites/default/files/2015-07/documents/fullreport\\_rev\\_a.pdf](https://www.epa.gov/sites/default/files/2015-07/documents/fullreport_rev_a.pdf)).

<sup>38</sup> See, e.g., 78 Fed. Reg. 10,006, 10,020-21 (Feb. 12, 2013) (rejecting more stringent limit of 0.04 lb/ton, versus the then-current limit of 0.07 lb/ton, reasoning that achieving that additional increment of particulate reduction would not be cost effective on a cost-per-ton basis because “\$268,000 per ton of PM removed ... is [a] significantly higher cost effectiveness for PM than the EPA has accepted in other NESHAP standards”) (citing 76 Fed. Reg. 15704 (March 21, 2011) (rejecting \$48,501 per ton of PM as not cost effective for PM emitted by solid waste energy recovery units)).

<sup>39</sup> Annualized cost assumptions are based on EPA’s assumption that 0/6% opacity can be achieved by installing partial roof canopy even though EPA cannot demonstrate that canopy hoods are BSER or that it has ever been used by a mill to consistently achieve 0% opacity.

<sup>40</sup> See 88 Fed. Reg. at 58,448 – 58,453.

only minimize PM emissions but also to maintain proper ventilation for thermal and other working conditions for workers in the meltshop. As such, the amount of air ventilated via the baghouse(s) depends on multiple factors, only one of which is the steel production rate, (*i.e.*, the tons/hour or tons/day at the EAF).

Contrary to the prior EPA administration's flawed understanding of how baghouses operate, for a given size (*i.e.*, cloth area and flow rate) baghouses can accept a wide range of inlet PM concentrations while still maintaining a low outlet PM concentration. The outlet concentration of a baghouse, therefore, does not depend on the inlet PM concentration so much as the condition/maintenance of the bags and the baghouse itself. Thus, when high concentrations of PM are observed in the exhaust of the baghouse, the likely causes are bag tears or failures rather than high inlet concentrations. It is for that reason that many baghouses have monitors such as bag leak detection systems ("BLDS"), which can detect and point to potential bag leaks in need of repair. None of these aspects relate to inlet PM loadings to the baghouse or the furnace production rate. For example, it is possible that due to bag leaks, high concentrations of PM are emitted by the baghouse due to other sources and activities in the meltshop, while the EAF itself may be non-operational and production may be zero.

Contrasting this real world understanding of affected facility and baghouse operation, EPA's 2023 NSPS revisions presented an erroneously over-simplified picture of the EAF, meltshop, and PM emissions in order to suggest that the lb/ton form of the PM standard is more appropriate. Specifically, EPA sought to justify the 0.16 lb/ton standard with unsupported assertions that the lb/ton form of the standard: (1) avoids manipulation of the grain/dscf form of the standard due to dilution – *i.e.*, that operators would intentionally or otherwise inject more air through the baghouse in order to dilute the concentration during testing and so meet the standard; and (2) is more indicative of mass emissions to the atmosphere and therefore better. Neither of EPA's reasons are based on any evidence or sound reasoning.

First, the grain loading form of the standard is readily usable for estimating the mass of PM emitted to the atmosphere – indeed facilities have always reported mass emissions to the atmosphere. Therefore, it is not, as EPA implied, somehow impossible to estimate mass emissions to the atmosphere unless the form of the standard is changed to lb/ton. That is a false premise.

Second, while EPA speculated about dilution potentially being manipulated to enable compliance, there is no evidence or examples in the rulemaking record (or elsewhere to the best of our knowledge) of anyone in the industry engaging in such "gaming" of the grain loading standard. Thus, EPA merely surmised that this could happen when it could not identify a single instance of this "dilution" practice occurring even though baghouse testing in the EAF industry has been conducted for decades.

Moreover, because the lb/ton standard does not provide any indication of baghouse condition or performance, as does the grain loading standard, which directly measures concentration at the baghouse exit, the lb/ton standard is inferior in ensuring what actually matters – *i.e.*, that the baghouse system is operating effectively and there are no bag leaks, *etc.*

That the lb/ton standard does little to improve emissions performance is also highlighted by the fact that the fundamentals of measuring PM have not changed in the new PM standard. In Subpart AAb, EPA continued to require sources to evaluate PM using EPA Method 5. This method requires evaluation of the “particulate matter concentration and volumetric flow rate of the effluent gas” to determine emissions performance.<sup>41</sup> Whereas the longstanding 0.0052 gr/dscf standard that continues to be used in Subpart AA and AAa require nothing more than comparing the Method 5 PM concentration results to the standard, Subpart AAb now requires sources to conduct an additional calculation step by converting the concentration to mass and dividing the mass by the tons of production occurring during the test.

This extra calculation step does nothing to clarify or improve the emissions performance of the unit. Instead, it penalizes, without justification, sources that have a smaller tonnage denominator, such as those with smaller production capacity or extended tap-to-tap times. This is because the amount of air flow required and the inlet concentration does not bear a linear relationship to production. Hence, emissions may be comparable between two facilities on a mass basis even though production is not similar. This shift in the compliance demonstration methodology also introduces additional layers of complexity that undermine the credibility of the standard. Determining compliance requires accurate measurement of production tonnage during the test period, precise alignment between emissions sampling and production cycles, and reliable allocation of emissions to specific steelmaking activities, all of which introduce uncertainty. These added dependencies make the standard more susceptible to data errors, inconsistent application, and disputes between operators and regulators over production tracking methods, particularly in facilities with variable throughput, auxiliary processes, or multiple emission sources in the meltshop. As a result, Subpart AAb’s lb/ton standard is less transparent, less reproducible, and ultimately less enforceable than a direct concentration-based standard.

EPA also stated, without basis, that operators that have multiple baghouses can exceed the lb/ton limit while meeting the grain loading standard. This reasoning makes little sense. If there are multiple baghouses, the total ventilation flow from the meltshop is divided among the baghouses. As long as each baghouse meets the grain loading standard, the mass of PM cannot increase just because there are multiple baghouses. The Steel Associations speculate that, perhaps, EPA mistakenly thought that because there are multiple baghouses, the total ventilation flow is greater than having just one baghouse. That is not how ventilation works. The ventilation load (*i.e.*, the air flow rate) is established based on meltshop conditions (only one of which is the EAF production rate). This flow is then split/distributed across one or more baghouses. Thus, PM mass emitted is not proportional to the number of baghouses, as EPA mistakenly (and without support) asserted.

In sum, Subpart AAb’s 0.16 lb/ton limit was largely based on *post hoc* rationalizations EPA developed after the comment period and which continued to reflect a deeply flawed understanding of how meltshop ventilation, PM generation, and baghouses work. In promulgating this new standard in Subpart AAb, EPA did not adequately respond to the Steel

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<sup>41</sup> 40 C.F.R. § 60.275a(e)(1) and 40 C.F.R. § 60.275b(e)(1). Note Method 5 under 40 C.F.R. § 60.275(e)(1) requires evaluation of the “particulate matter concentration and, if applicable, the volumetric flow rate of the effluent gas.” (emphasis added).

Associations' comments or reasonably reconsider its approach when presented data that called into serious question the rationality of its presumptions and analyses. These are the most obvious hallmarks of arbitrary and capricious rulemaking. The Steel Associations therefore believe that EPA must rescind Subpart AAb's insufficiently supported and unlawful 0.16 lb/ton PM limit.

3. Subpart AAb: Rescind, Revise, or Otherwise Clarify NSPS Subpart AAb Monitoring Requirements

EPA's NSPS Revisions imposed a number of different monitoring requirements on facilities subject to each of the different NSPS subparts (AA, AAa, and AAb). As previously noted, the Steel Associations believe that the CAA clearly prohibits EPA from retroactively amending existing Subparts AA and AAa to add these new monitoring requirements, and is therefore requesting that EPA rescind these in their entirety from Subparts AA and AAa. Subpart AAb, however, is an entirely new subpart and would only apply to facilities that are newly constructed, reconstructed, or modified. As such, the Steel Associations recognize that the CAA authorizes EPA to promulgate new monitoring and inspection requirements applicable to these newly constructed, reconstructed, or modified facilities.

Although the Steel Associations broadly recognize EPA's authority to promulgate monitoring and inspection requirements applicable to Subpart AAb, we believe that some of the monitoring and inspection requirements are so unclear and/or unsupported as to be impermissible. For instance, Subpart AAb requires facilities to monitor fan amperage and damper positions more frequently than EPA previously required under Subparts AA and AAa, but the regulatory text is drafted in such a way that it is unclear how frequently these parameters must be monitored and recorded. And nowhere in the rulemaking record did EPA explain why it increased the monitoring frequency for these parameters or identify the information on which the Agency relied in determining that once-per-shift monitoring was insufficient.

Subpart AAb's bifurcated shop opacity standard (*e.g.*, 0% shop opacity for melting and refining and 6% shop opacity for charging and tapping) presents similarly serious compliance monitoring concerns. Many EAFs are charged multiple times in a single heat, which means that the applicable shop opacity limit can change back and forth between 6% and 0% six or more times in a single heat, and multiple times (*e.g.*, during charging) the 6% opacity limit may apply for no more than a minute. Moreover, given that shop opacity levels are determined by conducting visible emissions observations conducted *outside* of the meltshop, and that emissions associated with a certain furnace stage inside the building may lag in exiting the building, it is not clear how one would reasonably correlate a specific observed plume with the opacity limit that applies to a discrete (and often fleeting) furnace stage.

These are just two discrete examples of several more Subpart AAb monitoring issues that are so unclear, infeasible, and/or insufficiently supported as to be unlawful. Subpart AAb contains several other equally concerning monitoring compliance issues, including those related to averaging times, calibration requirements, and weekly full furnace cycle visible emission observation requirements for facilities that operate multiple EAFs.

To address some of these arbitrary and ambiguous revisions, the Steel Associations therefore believe that EPA must amend the Subpart AAb monitoring requirements to require that fan amperage ranges be established based on the full range observed during the performance test, rather than requiring separate ranges for each damper position as currently specified in provisions such as 40 C.F.R. § 60.274b(h)(6). Requiring discrete fan amperage ranges for each damper setting introduces unnecessary operational complexity and fails to account for the real-world variability of meltshop operations, where damper positions may change dynamically in response to process conditions. The current approach in Subpart AAb does not meaningfully improve assurance of capture system performance and is not technically justified. In contrast, establishing a single fan amperage range based on the full range observed during the test provides a more practical, equally protective, and enforceable method for verifying proper capture system operation.

EPA should also clarify and restore the longstanding allowance to establish fan amperage ranges with a  $\pm 15\%$  margin, consistent with historical practice under Subpart AAa. In the 2024 IFR, EPA acknowledged in the preamble that its intent was to reinstate the 15% allowance based on industry feedback. However, the regulatory language that followed seemingly failed to achieve this objective, possibly due merely to drafting errors. Specifically, EPA limited the  $\pm 15\%$  margin to “operation of fan motors for owners and operators that elect to install a furnace static pressure monitoring device,” thereby seemingly excluding facilities that monitor fan amperage but do not use static pressure gauges for NSPS compliance. This marks a departure from past interpretations, under which the 15% allowance applied broadly to fan amperage monitoring regardless of whether a static pressure gauge was installed.

EPA acknowledged many of these problems itself in the 2024 IFR. One striking example was the removal of the weekly meltshop opacity requirement under 40 CFR § 60.273(d)(2), 40 CFR § 60.273a(d)(2), and 40 CFR § 60.273b(d)(2). In removing the standard, EPA conceded that it had never proposed nor intended to include the weekly opacity monitoring requirement, that the requirement was unnecessary for ensuring compliance, and that it would impose substantial unintended costs that were not considered.<sup>42</sup> This reversal is not merely a procedural footnote, but a striking example of how the Agency failed to exercise reasoned decision-making required under the Administrative Procedure Act. That such a burdensome requirement could make its way into a final rule without notice, comment, or supporting analysis highlights a troubling pattern that is evident in many of the monitoring provisions at issue.

Given the pervasiveness and seriousness of these monitoring issues, the Steel Associations believe that EPA must comprehensively revise Subpart AAb.

#### 4. Rescind the Subpart AAb Building Inspection Requirements

The 2023 NSPS Revisions imposed a new requirement for mills to perform monthly:

building inspections to ensure that the building does not have any holes or other openings for particulate matter laden air to escape. Any deficiencies that are

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<sup>42</sup> 89 Fed. Reg. at 11,201– 11,202.

determined by the operator to materially impact the efficacy of the capture system shall be noted and proper maintenance performed.<sup>43</sup>

Notably, the prior version of the NSPS (*e.g.*, in subpart AAa prior to its revision) required a “monthly operational status inspections of the equipment that is important to the performance of the total capture system (*i.e.*, pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (*e.g.*, presence of hole in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion).” But this inspection was only required of the capture equipment and ductwork for EAF the control equipment.

At proposal, EPA did not offer any explanation for the new building inspection requirement, merely including it in Subpart AAb as well as among several “clarifications” to the existing NSPS.<sup>44</sup> In rejecting the Steel Associations’ request to remove the unreasoned and seemingly duplicative proposed new meltshop building inspection requirements, EPA untenably asserted that “the melt shop building itself acts as a portion of the capture system.”<sup>45</sup> This assertion is incorrect and inconsistent with the explicit definition and scope of the “capture system” as defined in the regulations that have been in place for decades.<sup>46</sup> The fact that this significant change to a regulatory requirement was justified on the false basis that it was a “clarification” without any acknowledgement that it represented a change in position and requirements alone renders it arbitrary, and thus unlawful.

EPA further asserted, without supporting evidence, that the building inspection “procedure provides compliance assurance with melt shop opacity requirements, and is better than what is currently required at 40 C.F.R. § 60.272(a)(3)/§ 60.272a(a)(3).”<sup>47</sup> This ignores the fact that sources must comply with the opacity standard regardless of any inspection requirement and that the requirement to conduct daily visible emissions observations makes the new building inspection requirement duplicative and unnecessary. In fact, EPA altogether ignored that the building inspection requirement is not relevant to ensuring compliance with opacity standards as the presence of a hole or tear in the building does not mean that it can become a source of emissions from the EAF/AOD to the ambient air.

Nor is a prohibition on openings in the meltshop in any way connected to or supported by the administrative record before the Agency. Although every meltshop is different, all require multiple large doors and bays to move heavy equipment and materials in and out. They also intentionally provide for the introduction of outside air necessary for efficient combustion.

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<sup>43</sup> 88 Fed. Reg. at 58,484.

<sup>44</sup> Proposed 40 C.F.R. § 60.274(e), § 60.274a(d), and § 60.274b(d).

<sup>45</sup> 88 Fed. Reg. at 58,466 (“We disagree with the commenter that changes to 40 CFR part 60, subparts AA and AAa, should not be made as a correction because we understand that the melt shop building itself acts as a portion of the capture system particularly during charging and tapping.”).

<sup>46</sup> *Capture system* means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an electric arc furnace or AOD vessel to the air pollution control device. (*See, e.g.*, NSPS definitions at 40 C.F.R. 60.271a).

<sup>47</sup> 88 Fed. Reg. at 58,466.

Natural ventilation and air-flow through the meltshop, as well as through doors and other openings, are critical to maintaining a healthy workplace.

EPA also declined to conduct any cost analysis for this unnecessary new requirement based on the unsupported contention that there is no new burden associated with the new building inspection requirement because it “would not involve the purchase of equipment not currently available or installed at the facility and arguably is already addressed under the current requirement for inspections.”<sup>48</sup> But, prior to the 2023 NSPS Revisions, EAF mills were not required “to ensure that the building does not have any holes or other openings.” In fact, because the requirement has been expanded beyond inspection of the capture system equipment to include the entire meltshop building (buildings which can be a quarter mile long or more), mills now have to commit new resources and personnel to conducting the inspection and addressing any identified holes in the meltshop building. Even if a particular hole is not deemed to “materially impact the efficacy of the capture system,” this finding would need to be documented and justified.

The vague and undefined nature of key terms like “holes,” “openings,” or what “materially impacts” capture efficiency also creates confusion and unfair enforcement risk. The requirement is neither measurable nor objectively verifiable, and facilities will be left to guess how regulators will interpret it. This promotes inconsistent enforcement across regions and inspectors and harms both industry and regulators alike. Operators face uncertainty and potential penalties for violating conditions they cannot clearly prove or disprove, while regulators are forced to enforce ambiguous standards that lack a clear technical basis or compliance demonstration.

In sum, EPA provided no rational basis or cost analysis for the inspection provision. The Steel Associations therefore request that EPA rescind this improperly promulgated, insufficiently supported, and unnecessarily costly provision.

##### 5. Subpart AAb: Revise the NSPS Subpart AAb Definition of “Modification”

EPA’s 2023 NSPS Revisions added in Subpart AAb the following new definition of a “Modified facility:”

*Modified facility* means any physical or operational change to an existing facility which results in an increase in the emission rate (in kilograms per hour) to the atmosphere of any pollutant to which a standard applies. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.<sup>49</sup>

This “Modified facility” definition mirrors the definition of “Modification” in 40 C.F.R. § 60.2, which is part of the Subpart A “General Provision” applicable to each of the sector-specific NSPS in 40 C.F.R. Part 60. As applied to a single NSPS subpart, however, this definition is

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<sup>48</sup> 88 Fed. Reg. at 58,466.

<sup>49</sup> 40 C.F.R. § 60.271b.

prone to misinterpretation. More specifically, the phrase “any pollutant to which a standard applies” makes sense in a general definition that broadly applies to many different sector-specific NSPS subparts. As used in a single sector-specific NSPS subpart, however, the phrase “any pollutant to which a standard applies” could be misinterpreted to mean that a modification occurs whenever a facility subject to that sector-specific NSPS subpart increases emissions of *any pollutant* regulated under *any other NSPS*. Neither EPA nor the courts have ever interpreted the NSPS modification trigger in this way.

As such, in order to prevent potential misinterpretation of the “Modified facility” definition in Subpart AAb, the Steel Associations request that EPA modestly revise the definition as follows:

*Modified facility* means any physical or operational change to an existing facility which results in an increase in the emission rate (in kilograms per hour) to the atmosphere of ~~any~~ a pollutant to which a this standard applies. . .

6. Subpart AAb: Clarify NSPS Provisions Allowing Sources to Distinguish Emissions Using Operational Knowledge

Prescribing the means by which owners and operators determine the source of shop opacity emanating from the meltshop is important because under 40 C.F.R. § 60.272b(a)(3), owners and operators must demonstrate compliance with shop opacity standards based *only* on emissions from affected EAF and AOD facilities. Thus, a longstanding provision of the EAF/AOD NSPS states that when emissions from an EAF/AOD are combined with emissions from non-NSPS emissions sources during performance tests, the owner or operator may either base compliance on combined emissions or use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of that subpart.<sup>50</sup>

In the 2023 NSPS Revisions, EPA included in 40 C.F.R. § 60.275b(c) provisions that allowed owners and operators to use “operational knowledge” to determine the facilities that are the sources, in whole or in part, of any emissions in demonstrations of compliance with 40 C.F.R. § 60.272b(a)(3). The 2023 NSPS Revisions did not, however, make necessary conforming edits to 40 C.F.R. § 60.275b(h), which resulted in two different and contradictory mechanisms for distinguishing the sources of shop opacity when conducting visible emission observations under 40 C.F.R. § 60.272b(a)(3):

- Under 40 C.F.R. § 60.275b(c), as amended by the 2023 NSPS Revisions, “[t]he owner or operator *may use operational knowledge* to determine the facilities that are the sources, in whole or in part, of any emissions observed in demonstrations of compliance with [40 C.F.R. § 60.272b(a)(3)];<sup>51</sup>
- Under 40 C.F.R. § 60.275b(h), “[t]he owner or operator may... (1) *Base compliance on control of the combined emissions*; or (2) *Utilize a method*

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<sup>50</sup> See 40 C.F.R. 60.275b(b).

<sup>51</sup> Emphasis added.

*acceptable to the Administrator* that compensates for the emissions from the facilities not subject to the provisions of the [NSPS Subparts].”<sup>52</sup>

Thus, the 2023 NSPS Revisions inadvertently created two different and contradictory mechanisms that owners and operators must use in order to distinguish shop opacity emission sources when conducting visible emission observations to demonstrate compliance with the same regulatory provision (40 C.F.R. § 60.272b(a)(3)). And because these two different mechanisms are mutually exclusive, there is no question that the 2023 NSPS Revisions included a drafting error that needs to be corrected to provide clarity and regulatory certainty. The Steel Associations therefore respectfully request that EPA correct this aspect of the NSPS Revisions to allow reliance on operational knowledge.

7. Subpart AAb: Continue the EAF/AOD NSPS’s Startup, Shutdown, and Malfunction (“SSM”) Exemptions

EPA’s NSPS Revisions eliminated the EAF steel industry’s longstanding SSM exemption without otherwise accounting for foreseeable “malfunction” events that can and will occur, and which are beyond the control of the owner or operator and are therefore not reasonably preventable. Contrary to the Agency’s assertion, this action was not required by D.C. Circuit ruling in *Sierra Club v. EPA*,<sup>53</sup> in which the court vacated the SSM exemption under the General Provisions of the Agency’s 40 C.F.R. Part 63 NESHAP regulations. While the Steel Associations acknowledge that the D.C. Circuit adopted this holding with respect to the NESHAP provisions promulgated under Section 112 of the CAA, this decision in no way compelled EPA to eliminate SSM provisions in new and revised standards promulgated under Section 111.

Section 111 and Section 112 of the CAA are quite different. Section 112 “primarily targets pollutants, other than those already covered by a NAAQS, that present ‘a threat of adverse human health effects,’ including substances known or anticipated to be ‘carcinogenic, mutagenic, teratogenic, neurotoxic,’ or otherwise ‘acutely or chronically toxic.’”<sup>54</sup> Under Section 112, “EPA must directly require all covered sources to reduce their emissions to a certain level. And it chooses that level by determining the ‘maximum degree of reduction’ it considers ‘achievable’ in practice by using the best existing technologies and methods.”<sup>55</sup>

In contrast to the “national *emission* standards” promulgated under CAA Section 112 that are focused on reducing HAP emissions to the maximum extent possible, Section 111 requires EPA to promulgate “standards of *performance*,” which may also have the effect of reducing emissions, but are focused on only those reductions achievable through emissions reductions systems that are adequately demonstrated. Thus, unlike NESHAPs under which emissions reduction limits must be maximized and continuous, emissions limits under NSPS need only be continuous if continuous compliance irrespective of SSM is “achievable” based on application of the best system of emission reduction adequately demonstrated. This distinction has long been

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<sup>52</sup> Emphasis added.

<sup>53</sup> 551 F.3d 1019 (D.C. Cir. 2008).

<sup>54</sup> *West Virginia v. EPA*, 142 S. Ct. 2587 at 2600 (citing CAA Section 112(b)(2)).

<sup>55</sup> *West Virginia v. EPA*, 142 S. Ct. at 2600.

recognized by EPA as evidenced by the fact that EPA’s general NSPS provisions allow for SSM deviations.

As applicable here, SSM provisions should remain in the revised NSPS standards only if compliance with limits is demonstrated to be achievable through start-up, shut down, and malfunction periods.

The majority of EAF steel mill production is a batch process, for which “start-up” and “shut down” are normal parts of operation. Accordingly, “malfunctions” are the relevant “SSM” events that need to be considered for compliance purposes. As EPA recognizes, by definition, malfunctions are “any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner.”<sup>56</sup> Though “sudden and infrequent,” malfunctions are a natural and foreseeable occurrence with all manufacturing operations. Events such as utility power outages will occur from time to time and are wholly outside of the control of the operator. Likewise, operations may need to be interrupted for safety or other urgent reasons that can affect the functioning of air pollution control equipment and compliance with NSPS standards.

In light of the foregoing, the Steel Associations believe that EPA must restore the SSM exemption it impermissibly removed from existing NSPS Subparts AA and AAa, and include this exemption in Subpart AAb to provide sources subject to that subpart the same certainty and flexibility to lawfully maintain their equipment and protect the safety of their workers and the surrounding communities without violating air permits.

8. Subpart AAb: Rescind the NSPS Revisions’ Improper Specification of the Digital Camera Opacity Technique (“DCOT”) as an Industry-Wide Alternative Compliance Measurement Option

In EPA’s 2023 NSPS Revisions, EPA identified DCOT as an industry-wide alternative compliance measurement option for monitoring opacity. DCOT is not an appropriate or recognized robust monitoring method for low level opacity under all conditions, based on EPA’s own formal admission that they have error bands that are too wide and therefore inappropriate for measuring opacity below 10 percent. Given still unresolved and outstanding questions about the accuracy and reliability of optical devices for measuring fugitive emissions at levels as low as the EAF NSPS, especially based on site-specific factors, it was inappropriate for EPA’s NSPS Revisions to specify DCOT as an industry-wide alternative compliance measurement option. The Steel Associations therefore urge EPA to remove DCOT as an alternative compliance measurement option for monitoring opacity.

#### **IV. STEEL ASSOCIATION RESPONSES TO EPA NSPS RECONSIDERATION QUESTIONS**

In the subsections that follow, the Steel Associations provide responses to each of the questions EPA has raised in the course of our reconsideration discussions.

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<sup>56</sup> 40 C.F.R. § 60.2.

a. **In the petitions, SMA<sup>57</sup> objected to the definition of damper in the rule, but SMA did not propose an alternative. Does SMA have suggestions on an alternative definition?**

The Steel Associations are concerned that the 2023 NSPS Revisions' new "damper" definition is confusing and potentially prone to misinterpretation in the context of enforcement and compliance. To address those concerns and reasonably account for the significant variability in the design of mills and their capture and control systems, the Steel Associations recommend that Subpart AAb define "damper" as:

*The damper(s) that the owner or operator determines to be the primary compliance damper for capturing affected facility emissions and routing them to the associated control device(s). At least one primary compliance damper will be determined by the owner or operator for each affected facility.*

b. **Damper Monitoring Questions**

1. How do damper positions change seasonally?
2. How do damper positions change based on the grade of steel produced?
3. How often does damper position typically change during a heat? What is the typical range?

EAF meltshops are complex and dynamic operating environments with several variables that impact ventilation and controls including building dimensions, the number and type of other operations controlled by the baghouse, ambient temperatures, steel grade, upset conditions, caster conditions, and other factors, some of which may also be impacted by meteorological variables influenced by where a meltshop is located geographically. Given the dynamic nature of the meltshop environment, the Steel Associations cannot definitively state exactly how EAF mills may operate dampers in the given situations, but some meltshop operators may need to vary damper positions to account for changes in several variables to ensure quality steel is being produced. Insofar as we are aware, there is no typical number of damper position changes within a single heat. Some mills may not vary their damper positions at all, but others may open dampers more toward the beginning of a heat in response to higher gas formation in the initial part of the heat.

4. Operationally (i.e., not as currently required by the final rule), how are damper position changes currently monitored and recorded? Are damper position changes monitored and recorded continuously? If not monitored continuously, how often is the damper position monitored?

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<sup>57</sup> EPA's questions occasionally refer to SMA, which is just one of the three Steel Associations that petitioned for reconsideration of the 2023 NSPS Revisions and 2024 ICR. We presume EPA's reference to SMA was unintentional, but for sake of clarity, we reiterate here that these responses were collectively provided by the Steel Associations (AISI, SMA, and SSINA).

The Steel Associations are aware of some mills that have continuous monitoring systems that record their damper positions. Insofar as we are aware, other mills monitor and record damper positions consistent with regulatory requirements.

5. Do damper positions change automatically based on detected furnace conditions during the various furnace stages or are they adjusted manually (computer control) by the operator?

Damper positions can be changed a number of different ways depending on the source, capture system control capabilities, and specific circumstances. At some mills, damper positions are changed manually. At other mills, damper position changes may be automated, although even in these mills, damper positions may occasionally be changed manually.

**c. Fan Speed and Amperage Questions**

1. How does the fan speed change? Is fan speed changed automatically, on demand, based on damper position and a set flowrate, or is fan speed also changed by operator control?

EPA's question refers to "fan speed," but the relevant parameter for purposes of the NSPS is "fan amperage" so the Steel Associations are herein responding accordingly. As with damper positions, fan amperage can be changed a number of different ways depending on the source, capture system control capabilities, and in response to variations in particulate loading scenarios. Fan speed is not set, amperage is set, and the fan speeds to maintain the set amperage. At some mills, fan amperage can be changed manually, by automation, a blend of both automation and manual controls.

While there may be instances in which some mills change fan amperage in conjunction with damper position changes, the manner in which individual mills operate these parameters is far too variable for the Steel Associations to suggest there is a standard or even prevailing operational approach in the EAF industry. Fan amperage and damper positions are simply not rigidly correlated parameters at all mills or in all scenarios.

2. Operationally (i.e., not as currently required by the final rule), how are fan amperes monitored and recorded? Are fan amperes monitored continuously?

Generally, every baghouse will have varying monitoring and recording devices with different monitoring and recording intervals and different levels of automation with respect to recording monitoring output. Likewise, individual mills and companies also vary significantly in their operation and programming of these different baghouse operating systems. Thus, providing a one-size-fits-all answer to this question would be misleading. Insofar as the Steel Associations are aware, the only prevailing practice/frequency within the EAF industry is to "check and

record the control system fan motor amperes and damper position on a once-per-shift basis” per the longstanding requirements of the NSPS.

**d. Questions on Tracking Furnace Stages**

1. What is the typical time period for each furnace stage?
2. What is the minimum time period for each furnace stage?

Furnace stage durations can vary significantly depending on a variety factors, however the Steel Associations believe that the following characterizations from the administrative record are broadly representative of the duration of furnace stages throughout most of the industry.

- “The production of steel in an EAF is a batch process where ‘heats’ or cycles range from 1 to 5 hours, depending upon the size and quality of the charge, the power input to the furnace, and the desired quality of the steel produced.”<sup>58</sup>
  - EAF heat cycles “range from about 1.5 to 5 hours to produce carbon steel and from 5 to 10 hours to produce alloy steel.”<sup>59</sup>
  - “heat times and tonnages produced... vary considerably depending on the product grade of steel and the mix of such products at various mills. Some carbon EAF mills produce high tonnages in relatively short heat times, while specialty EAF steel facilities produce much smaller tonnages over heat times that can be 2-3 times as long.”<sup>60</sup>
    - Melting/Refining: Approximately 40-60 minutes (typically broken down in two to three 20-30 minute periods separated by charging periods;<sup>61</sup>
    - Charging: From less than one minute to approximately three minutes, two to three times per heat;<sup>62</sup>
    - Tapping: Approximately four to six minutes.<sup>63</sup>
3. What factors impact the time period for each stage?

At some mills, the duration of furnace stages can vary considerably based on factors such as scrap mix; grade and/or amount of steel being produced in a given heat; the size and/or number of charges; the efficiency/experience of the EAF operator; the extent to which the scrap and/or ladle has been preheated, the extent of metallurgical sampling, alloying, refining needed; and the facility’s production schedule. The duration of EAF stages also frequently depend on other upstream and downstream processes within the meltshop. These include the availability of scrap

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<sup>58</sup> EPA, Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Industry - *Background Information for Proposed Revisions to Standards, Preliminary Draft*, at 3-19 (June 1982).

<sup>59</sup> 2023 NSPS Revisions (88 Fed. Reg. at 58,445).

<sup>60</sup> Steel Associations’ August 2023 NSPS Proposal Comments at 44-45.

<sup>61</sup> Steel Associations’ August 2023 NSPS Proposal Comments at 45.

<sup>62</sup> Steel Associations’ August 2023 NSPS Proposal Comments at 45-46; Steel Associations’ October 2023 Petition for Reconsideration at 14; Steel Associations’ March 2024 Comments on the 2024 IFR at 11; Steel Associations’ Petition for Partial Reconsideration of the 2024 IFR at 11. Note that these estimates are not reflective of charge times for EAFs with continuous charging systems.

<sup>63</sup> Steel Associations’ August 2023 NSPS Proposal Comments at 46.

to charge in the furnace; the efficiency of the crane operator; and backlogs or unused capacity at any one of multiple subsequent steelmaking stages that may require EAF operators to either speed up or slow their tap-to-tap times.

4. How are furnace stages currently documented/recorded?

EAF steel manufacturing facilities subject to Subparts AA or AAa are not generally required to track furnace stages so any facilities that opt to document and record furnace stages likely do so according to their own internal guidelines. Facilities that track the time and duration of furnace stages generally do so only for the purposes of tracking/optimizing their production efficiency and ensuring that their production of molten steel in the EAF is coordinated with downstream production steps (*e.g.*, further refining in a ladle metallurgy station, transfer to a tundish). Given that most mills generally only record/document furnace stages for operational reasons, the Steel Associations believe that most often this information is automatically tracked and logged by EAF control systems. At certain mills, however, furnace stages may be manually recorded by the EAF operator.

e. Questions on Charging

1. Please summarize how the Consteel® process differs from the typical EAF furnace operation?

In a “typical” EAF steel operation, scrap is “charged” into the EAF in batches. First, the electrodes must be retracted through the roof of the furnace. With the electrodes retracted, the furnace roof is rotated aside to allow scrap and other raw materials to be placed into the EAF. With the roof removed, scrap metal can be loaded into the furnace using a bottom-drop charge bucket that is maneuvered over the top of the furnace and opened via overhead crane. Once the charge has been dropped into the furnace, the roof is rotated back into place, the electrodes are lowered back through the furnace roof and energized, and the melting process resumes.

Consteel® is a trademarked system developed by a specific OEM. The system is a continuous feed system. EAFs that are equipped with a continuous charging systems are also typically initially charged by a crane-operated charge bucket as described above. After the initial charge typically, the scrap is charged into the furnace via a conveyer system or through a shaft situated above the EAF that connects through the furnace shell and allows scrap to be continuously fed into the molten steel bath generally without removing the furnace roof. A bucket-charge could occur at any point for future charges depending on other operational variables, like scrap needs or the maintenance limitations of the continuous charge system.

2. Is material truly being charged during 100 percent of the furnace cycle?

Many EAFs with continuous charging systems do in fact charge scrap metal throughout all or nearly all of the furnace cycle, however in some systems, charging is suspended during tapping. Additionally, most facilities that use continuous charging systems will initially start operation of a cold EAF by removing the roof and dropping the charge via overhead crane. After the EAF

has a “heel” of molten steel, all subsequent scrap will generally be charged into the furnace through the continuous charging system conveyer.

3. How many Consteel® systems are currently in use in the U.S.? Where are they located?

The Steel Associations understand that there are continuous charging systems in use at the following mills: (1) CMC, Mesa AZ; (2) CMC Knoxville, TN; (3) CMC Sayreville, NJ; (4) CMC Durant, OK; (5) Gerdau Charlotte, NC; (6) Nucor Frostproof, FL; (7) Nucor Cofield, NC; (8) Nucor Sedalia, MO; (9) Nucor Darlington, SC; (10) JSW, Mingo Junction, OH; and (11) Charter Steel, Saukville, WI.

4. How many Consteel® systems are planned to be installed in the next 3 years?

The Steel Associations do not have any information responsive to this question.

5. How much time lapses between the end of charging and the beginning of melting and refining stages? [The rule allows charging opacity observations to continue after the activity of charging ceases, up until melting and refining begins.] Note - Melting and refining period means the time period commencing at the initial energizing of the electrode to begin the melting process and ending at the initiation of the tapping period, excluding any intermediate times when the electrodes are not energized as part of the melting process.

Under the revised NSPS subparts, there is generally no lag between the end of the charging period and the beginning of the melting and refining period. This is because the NSPS Subparts define the “charging period” such that it continues “until the melting and refining period commences,” and define the “melting and refining period” as “commencing at the initial energizing of the electrode to begin the melting process.” Setting aside the NSPS definitions, however, once a charge is dropped into the EAF via overhead crane, it typically takes approximately one minute or less for EAF operators to close the furnace roof and engage and energize the electrodes.

**f. Questions About Compliance Monitoring**

1. 40 CFR part 60, subpart AA has a 6 percent opacity limit at the melt shop except for during periods of charging and tapping when the melt shop opacity limits are 20 percent and 40 percent, respectively (see 40 CFR 60.272(a)(3)(i) and (ii)). Please describe how EAF facilities typically demonstrate compliance with the subpart AA opacity limits for all periods of a heat, i.e., melting and refining, charging, and tapping?

Insofar as the Steel Associations are aware, there are no longer any facilities that operate EAFs subject to Subpart AA. However, we believe that EAF facilities previously subject to Subpart AA demonstrated compliance with shop opacity limits by conducting daily Method 9 visible emission observations “when the furnace was operating in the melting and refining period.”<sup>64</sup>

2. Similarly, for 40 CFR part 60, subpart AAa, EAF facilities are subject to a 6 percent opacity standard for the melt shop (see 40 CFR 60.272a(a)(3): *Exit from a shop and, due solely to the operations of any affected EAF(s) or AOD vessel(s), exhibit 6 percent opacity or greater*). Please describe how EAF facilities demonstrate compliance with the subpart AAa opacity limits. How is compliance determined when melt shops have multiple furnaces with some furnaces subject to subpart AA and other furnaces subject to subpart AAa? Do EAF facilities monitor opacity during charging and tapping for their own purposes or to comply with a state or local agency requirement (e.g., Title V permit requirement)?

Facilities subject to Subpart AAa demonstrate compliance with shop opacity limits by conducting daily Method 9 visible emission observations as required by 40 C.F.R. 60.273a(c)(2). Insofar as the Steel Associations are aware, there are no facilities that operate an EAF subject to Subpart AA and an EAF subject to Subpart AAa in the same meltshop. Therefore, we cannot explain how such a facility would potentially demonstrate compliance with two different shop opacity limits. We are also unaware of any EAF facilities that routinely monitor shop opacity from charging and tapping for their own purposes or to comply with state-only permit requirements.

**g. Questions about Subpart AAb BSER Determinations**

In the petitions, SMA stated that EPA’s determination that partial roof canopies are the Best System of Emissions Reductions (BSER) was not adequately supported by the record.

1. Are there physical or operational differences between melt shops that may result in some melt shops not being able to achieve zero percent opacity using a partial canopy? If yes, describe the differences and explain how they impact the collection efficiency.
2. Are there physical or operational differences between EAF/AOD that may result in some melt shops not being able to achieve zero percent opacity using a partial canopy? If yes, describe the differences and explain how they impact the collection efficiency.
3. Are there differences in the design of the partial canopies installed at melt shops that may result in some melt shops being unable to achieve zero percent opacity on a continuous basis that SMA would suggest EPA consider? If yes, describe the design differences and explain how they impact collection efficiency.

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<sup>64</sup> 40 C.F.R. 60.273(c)(2).

4. Are there differences in the operation of the partial canopies installed at melt shops that may result in some melt shops being that SMA would suggest EPA consider? If yes, describe the differences and explain how they impact collection efficiency.

Insofar as we are aware, there is no design or manner of operating a partial roof canopy, meltshop, or EAF/AOD that allow an EAF steelmaking facility to consistently achieve zero percent shop opacity. Most EAF steelmaking facilities already use canopies and partitions of various designs to direct EAF emissions within the meltshop to the extent feasible, and none of these facilities have ever been able to successfully use this technology to consistently achieve zero percent shop opacity.

As the Steel Associations explained in our August 2022 comments and October 2023 Petition for Reconsideration, even for 32 of the 38 EAFs that EPA's record identified as using partial roof canopies, the presence or absence of the technology was in no way correlated to whether the sources achieved zero percent opacity during performance tests. And even if a subset of the sources with partial roof canopies achieved zero percent opacity throughout the duration of a performance test, none of the facilities relied upon by EPA achieve zero (or even less than one percent opacity) on a continuous basis. Several of these "zero percent" facilities, in fact, reported occasional instances of opacity in the 4-6% range.<sup>65</sup>

Each of the 32 EAF steelmaking facilities in EPA's database have unique meltshop configurations, utilize different sizes and types of EAFs/AODs in a variety of operating scenarios, and variously operate an assortment of differently designed, sized, and configured partial roof canopies. The use of partial roof canopies at these 32 diversely designed and operated facilities demonstrates that there is no manner of designing or operating a meltshop, EAF/AOD, or partial roof canopy to consistently achieve zero percent shop opacity. This conclusion is entirely consistent with the Steel Associations' members' experience operating an even larger and more diverse array of meltshops, EAFs/AODs, and partial roof canopies.

5. SMA stated that a total enclosure would be needed to achieve zero percent opacity and that the costs for installing such a system would be too high. Can SMA provide costs information, including equipment (costs for the enclosure and ancillary equipment), installation, monitoring equipment, and annual operating costs?

The Steel Associations cannot quantify the costs associated with totally enclosing an EAF meltshop to achieve zero percent shop opacity because insofar as we are aware, no EAF mill has ever totally enclosed its meltshop or consistently achieved zero percent shop opacity. Totally enclosing an EAF meltshop is infeasible for a number of reasons.

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<sup>65</sup> Steel Associations' August 2023 NSPS Proposal Comments at 60; Steel Associations' October 2023 Petition for Reconsideration at 9.

First and foremost, as EPA previously recognized when reviewing the EAF/AOD NSPS,<sup>66</sup> meltshop ventilation is necessary to minimize potential heat stress on workers, improve indoor air quality, and reduce hazards associated with poor visibility. Additionally, EAFs require a significant inflow of air because the extremely high temperature at which EAFs operate (approximately 3000° F) necessitates a large volume of makeup air. Totally enclosing an EAF meltshop is also infeasible and unworkable from an operational perspective because of the large bay doors that EAF steel mills need to move large ladles, stacks of billets, dump trucks conveying scrap and furnace products, and other equipment/materials.

These are only a few of the many practical and operational reasons why no EAF mill has accomplished total enclosure of its meltshop, but they are key factors in the design and operation of meltshops. As such, while the Steel Associations have no real world example of a totally enclosed meltshop from which to derive cost estimates, these three factors (worker health and safety, EAF/control air flow requirements, and material/equipment access needs) alone reflect that, if total meltshop enclosure were to be attempted at all, it would require a complete redesign of the meltshop, EAF and steelmaking process configuration, and air pollution control system.

Although the Steel Associations cannot herein provide an approximate cost for attempting to totally enclose a meltshop (especially given the significant variability in the design and operation of EAF mills), we can confidently conclude that such a project would be so universally cost-prohibitive to design, construct, and operate that EAF mills would not undertake it – particularly in light of the high likelihood that the project will fail to accomplish total enclosure or consistently achieve zero percent shop opacity at all times.

6. Are there any collection and/or control technologies that would reduce particulate emissions from melt shops that EPA did not consider but should?

The Steel Associations are not aware of any additional capture and/or control technologies that could be feasibly employed to reduce shop opacity and are certainly not aware of any technologies that could consistently reduce shop opacity to zero percent during charging and tapping.

7. SMA stated in the October 24, 2023 petition that several of the melt shops equipped with partial canopies that achieved zero percent opacity during performance tests reported occasional instances of opacity in the 4-6% range.
  - i. *Can SMA provide data documenting the higher opacity readings for melt shops equipped with partial canopies?*

On November 8, 2022, the Steel Associations provided Dr. Donna Lee Jones data that we believe are responsive to this inquiry. If this information is not responsive to EPA's request or otherwise

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<sup>66</sup> 49 Fed. Reg. at 43,841; 48 Fed. Reg. 37,342.

no longer available to the Agency, the Steel Associations are glad to work with EPA to address this inquiry.

- ii. *In which part of the furnace cycle did the high opacity readings occur?*

Insofar as the Steel Associations are aware, only one (Facility #3) of the 13 facilities that provided the opacity readings discussed in page 25-26 of our August 15, 2022 comments and on page 10 of our October 24, 2023 Petition for Reconsideration included opacity readings that were taken during charging and tapping. The vast majority were taken during the melting and refining stage of the furnace cycle. The data shows that higher opacity readings were occasionally recorded during each furnace stage.

- iii. *If the opacity readings exceed zero during melting and tapping:*

The Steel Association note that this inquiry refers to “melting and tapping” We believe this is a drafting error and that EPA intended to refer to “melting and refining.” If our assumption is incorrect, please let us know.

- A. *How often in a typical month do the opacity readings exceed zero percent during melting?*
- B. *How often in a typical month do the opacity readings exceed zero percent during tapping?*

The Steel Associations do not believe there is a “typical month” or typical frequency for non-zero shop opacity results. The fact is that all mills record zero percent opacity readings the vast majority of days, but as the data in the administrative record show, out of thousands of readings over a year or two, several dozen will show non-zero opacity. Thus, as we stated in our October 24, 2023 Petition for Reconsideration: “The fact that most mills achieve zero percent opacity most of the time is simply not sufficient to support EPA’s conclusion that continued use of the same technology already widely used throughout the EAF steelmaking industry will allow new and modified sources to achieve continuous compliance with a zero percent opacity limit.”

- C. *When do the high opacity readings typically occur (e.g., at the beginning of the melting stage, throughout the tapping period, etc.)?*

The Method 9 visible emission observation records the Steel Associations compiled and reviewed when drafting comments on the proposed NSPS do not provide this level of detail. However, because Method 9 data was only previously required to be collected on a daily basis during melting and refining periods much of the data likely reflects those periods.

- D. *What physical or operational factors explain why the opacity readings fluctuate from zero to readings above zero during the melting period?*
- E. *What physical or operational factors may explain why the opacity readings fluctuate from zero to readings above zero during the tapping period?*

The primary reason why opacity readings can fluctuate between zero and non-zero is because there is very little difference between “zero” opacity and opacity of “anything above zero.” EAF steelmaking is a dynamic process that occurs within a large meltshop with several large and small bays and other openings, and which houses many other operations and equipment that can influence air flow and emissions. Even though the melting and refining stage is typically the lowest emitting stage in the furnace cycle, any number of minor variations in equipment operation, capture efficiencies, or furnace conditions could potentially cause a small incremental change between “zero” shop opacity and “any” shop opacity. Additionally, atmospheric/meteorological conditions (outside the control of sources) often have a significant impact on whether any emissions will result in opacity or not on a given day.

Small and/or short-lived increases in shop opacity during the melting and refining stage can be caused by cross-winds through the meltshop, the movement of equipment in and out of the meltshop, airflows created by overhead crane operations, scrap/raw material quality, minor deviations in the operation of the EAF or capture and control system, or other potential emissions sources within the meltshop. These variations are all reflective of EAF mills’ dynamic processes and complex operating environment – they are in no way indicative of deficient air pollution control practices.

### III. CONCLUSION

The Steel Associations appreciate the opportunity to identify our concerns with the NSPS Revisions, propose an approach to efficiently address those concerns, and respond to EPA's questions. We look forward to our continued engagement with the Agency on this important issue.

To that end, the Steel Associations request an opportunity to meet with you and other relevant Agency staff once you have had the opportunity to review this letter and consider our proposed approach.

We will be reaching out shortly to schedule that meeting. In the meantime, if you have any questions or would like to discuss this letter, please do not hesitate to reach out to any of the Steel Association representatives using the contact information below.

Respectfully submitted,



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