COMMENTS OF THE
AMERICAN IRON AND STEEL INSTITUTE
AND
UNITED STATES STEEL CORPORATION

on

and

Notice of Comment Period Reopening
Docket ID No. EPA-HQ-OAR-2002-0083

Submitted November 7, 2019
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3. Imposing opacity limits on the UFIP sources is inappropriate and unnecessary.

IV. EPA Properly Determines That No Revisions Are Necessary Pursuant To Clean Air Act Section 112(d)(6).

A. EPA properly found no developments in practices, processes, or control technologies that necessitate revision to the Subpart FFFFF standards.

B. The work practice standards for UFIP sources on which EPA solicits comment are not technology developments and should not be adopted pursuant to Clean Air Act Section 112(d)(6).

C. EPA appropriately proposes not to require installation of baghouses at blast furnaces in that they are already controlled by fume/flame suppressants and that the requirement would not be cost-effective.

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1. The proposed mercury emission standard is based on fundamental flaws in the data and analysis.

2. To promulgate a reasonable mercury emission standard, EPA would need to develop more data and undertake a better analysis that accurately accounts for variability in emissions due to inputs.

3. Any mercury emission standard needs to be issued in a separate rulemaking apart from the current RTR rulemaking, given the timing of the RTR.

B. If EPA nonetheless proceeds to finalize a mercury standard during this RTR rulemaking, several changes to the numeric standard calculation and the proposed compliance options are necessary.

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2. If EPA finalizes a mercury standard, compliance options like obtaining scrap through the NVMSRP or equivalent programs and certifying that automotive shredded scrap is unlikely to contain mercury need to be included.

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Attachment B: Letter from Paul Balserak, Vice President, Env’t, AISI to Chuck French, Sector Policies & Programs Div., OAQPS, EPA (Feb. 4, 2019), EPA-HQ-OAR-2002-0083-0804.


Attachment H: Letter from Janet McCabe, Acting Assistant Adm’r, EPA Office of Air and Radiation, to Peter Pagano, Vice President, Env’t, AISI (June 15, 2015).
The American Iron and Steel Institute ("AISI") and United States Steel Corporation ("U. S. Steel") (together, "AISI/USS") submit these comments in response to the U.S. Environmental Protection Agency’s ("EPA" or "the Agency") National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing Facilities Residual Risk and Technology Review; Proposed rule, 84 Fed. Reg. 42,704 (Aug. 16, 2019) ("Proposed Rule"). AISI serves as the voice of the North American steel industry, representing member companies, including iron and integrated steel manufacturers, that account for the majority of U.S. steelmaking capacity. U. S. Steel is a leading steel manufacturer with several facilities located throughout the United States and Europe. AISI members include integrated steel manufacturers, who, along with U. S. Steel, own and operate facilities in the United States subject to Clean Air Act regulations, including the National Emission Standards for Hazardous Air Pollutant ("NESHAP") for integrated iron and steel manufacturing ("II&S"), 40 C.F.R. Part 63, Subpart FFFFF.

These points highlight key elements of the comments:

- The EPA analysis for the II&S source category already shows very low risk and EPA should adjust its model inputs as recommended in these comments to reflect even lower risk levels than were modeled for the Proposed Rule. Indeed, with the corrected inputs recommended in these comments, cancer risk estimates for the maximally exposed individual under all emissions scenarios (actual, allowable, and acute) are in the single digits in a million.

- The decision that no revisions to the standards are necessary pursuant to the technology review is reasonable given that companies already use up-to-date technology. In particular, the decision not to adopt additional work practices is sound, particularly in light of the low risk, lack of meaningful risk reduction to be achieved, and the high cost and lack of feasibility of implementing such practices.

- The proposed mercury standard should not be finalized at this time given problems with the dataset used to establish it, the lack of time to correct those flaws between now and the court-ordered deadline for issuing a final residual risk and technology review ("RTR"), and that EPA is not obligated to fill perceived "gaps" during the risk and technology review rulemaking.

- If EPA nonetheless proceeds to issue a mercury standard, it needs to be revised to account for variability, including for scrap mercury content variability in applying a upper prediction limit ("UPL") analysis to the top 5 performing sources and evaluating scrap percentage in the charge during the stack testing (see Attachment D, Barr Engineering Co., Integrated Iron & Steel Manufacturing RTR: Mercury MACT Floor Analysis (Sept. 30, 2019). For any such standard, EPA should also finalize the proposed reliance on the National Vehicle Mercury Switch Recovery Program ("NVMSRP") but should reduce the proposed recordkeeping and verification obligations on the source, given the established track record of the program and EPA’s programmatic verification of it.
I. A Robust Steel Industry is Critical to the Health and Security of Our Country.

The steel industry is in many ways the backbone of American manufacturing. Since the advent of the Industrial Revolution in the United States, steel production has been a critical element propelling the nation forward to the top echelons of global military and trading powers alike. Steel is a key component of our national defense and our critical infrastructure, supplying a wide range of sectors vital to the economy, from automakers to construction. Recognizing the importance of steel to the nation, the government has worked with the steel industry as part of its plans for economic expansion.

AISI serves as the voice of the North American steel industry in the public policy arena and advances the case for steel in the marketplace as the preferred material of choice. AISI also plays a lead role in the development and application of new steels and steelmaking technology. AISI is comprised of 18 member companies, including integrated and electric arc furnace steelmakers, and approximately 120 associate members who are suppliers to or customers of the steel industry. In addition to the core members of AISI, these comments are submitted on behalf of U. S. Steel Corporation. U. S. Steel is a leading steel manufacturer with several facilities in the United States and Europe. For over 118 years, while consistently meeting new challenges, U. S. Steel has been a vital part of America’s history, security and infrastructure. With sustainability being a main driver, American steel producers have worked successfully to reduce our environmental footprint even while producing the advanced and highly recyclable steel that our economy needs. We have been encouraged by the current administration’s recognition of the need for a partnership with industry to preserve and protect our shared environment, while simultaneously promoting economic growth. This is, of course, consistent with the goals of the Clean Air Act, where Congress directed EPA “to protect and enhance the quality of the Nation’s air resources” with the purpose of “promot[ing both] the public health and welfare and the productive capacity of its population.”

The Proposed Rule’s finding that risk is acceptable and that the companies are using up-to-date technology to address emissions demonstrates that the industry has achieved the health and environmental requirements contemplated under Section 112 of the Clean Air Act. It is against this acceptable risk finding that any further actions must be considered. The dual goals of the Clean Air Act, noted above, show the important balancing that is reflected specifically in Section 112, including for the risk and technology review analyses. Especially given these risk findings, it is important for EPA to ensure that it is not overburdening our domestic facilities with regulation in light of the significant competition steelmakers face from foreign markets, many of which are not subject to the stringent requirements that apply to our facilities. AISI and U. S. Steel are proud that our total industry (both integrated iron and steel production as well as electric arc furnaces) employs more than 387,000 people in the United States and indirectly supports nearly two million jobs. We contribute more than $520 billion to the economy when considering the direct, indirect, and related impacts. The strong international competition the industry encounters makes us vulnerable to even small increases in operating costs, which is why we respectfully submit that EPA must carefully consider adding to this burden in an industry with an acceptable risk finding.

1 42 U.S.C. § 7401(b)(1).
Our comments below highlight aspects of the proposal where EPA has appropriately found that risk is acceptable (and indeed, we believe is overstated), and where additional burdens are proposed that should either not be adopted or should be recast to be more economically prudent.

II. While EPA’s Already-Conservative Estimates Show That The II&S Source Category Risk Is At Acceptable Levels, The Estimates Actually Overstate Risk And If Revised Appropriately To Reflect Accurate Emissions Information Will Show Even Lower Risk Levels.

EPA proposes to determine that the residual risk from the II&S source category after application of the controls required under the original Maximum Achievable Control Technology (“MACT”) standard is “acceptable” and provides an “ample margin of safety” (“AMOS”). These findings are both reasonable and appropriate at the risk levels the Proposed Rule estimates, which were derived from very conservative inputs. They are even further supported given that the inputs to EPA’s Proposed Rule modeling were based on erroneous information that overstated the emissions from sources in the category, and that EPA states will be corrected in the final rule modeling runs in light of new test data EPA has received since the original modeling was conducted. AISI/USS appreciate EPA’s recognition of the new test data in the preamble and its stated intention to rerun the model for the final action to take into account this information.

To support the development of this rulemaking, AISI prepared and submitted a report entitled Analysis of Residual Risk Modeling Inputs for the Integrated Iron and Steel Manufacturing Residual Risk and Technology Review (Nov. 28, 2018) (“Risk Analysis Report”) and included here as Attachment A to these comments. This report was based on review by AISI and its consultant, AECOM, of risk modeling information that EPA made publicly available on its website. In the Risk Analysis Report, AISI detailed several key concerns with the Agency’s approach to modeling risk for the II&S source category. AISI/USS repeat many of these same concerns and recommendations in our comments below, in light of the fact that the Proposed Rule continues to reflect the same faulty risk modeling approach. AISI/USS appreciate, however, that EPA has committed to make these substantial changes and rerun its risk modeling analysis for the final rule.

We have run the model with these new inputs, and when EPA adopts the corrections to the emission inputs and modeling parameters detailed in the following comments and as discussed in the preamble, the results will show that the source category risk is very low and, given that, does not support any additional regulation in the final action.

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4 Id.
5 EPA Docket No. EPA-HQ-OAR-2002-0083-0801.
A. EPA’s proposal correctly concludes that the II&S source category presents acceptable risk and the existing standards provide an ample margin of safety.

EPA appropriately applied the two-step decision-making framework set forth in Clean Air Act Section 112(f) and established by the U.S. Court of Appeals for the District of Columbia Circuit’s (“D.C. Circuit”) decision in NRDC v. EPA, 824 F. 2d 1146 (D.C. Cir. 1987) (en banc) (the “Vinyl Chloride decision”) and the 1989 Benzene NESHAP Rulemaking, to determine the residual risk of the II&S source category. First, EPA determines an “acceptable” level of risk to the public without considering costs; next, the Agency determines the level of risk that is protective of public health with an “ample margin of safety” and that will prevent an adverse environmental health effect considering costs, technological feasibility, uncertainties, and other relevant factors. The AMOS analysis cannot yield a number less stringent than the acceptable risk level. EPA considers maximum individual cancer risks as high as 100-in-a-million (1-in-10 thousand) to be presumptively “acceptable” or “safe,” although risks greater than that threshold may be safe depending on a review of certain health and other factors.

Because a decision on acceptable risk cannot be reduced to any one factor, as EPA explained in the Benzene NESHAP, it also looks to “the level of the [maximum individual lifetime risk (“MIR”)], the distribution of risks in the exposed population, incidence, the science policy assumptions and uncertainties associated with the risk measures, and the weight of evidence that a pollutant is harmful to health.” These other factors are particularly important where EPA evaluates risks above the presumptive range of acceptability of 100-in-a-million. “As risks increase above this benchmark, they become presumptively less acceptable under Section 112, and would be weighed with the other health risk measures and information in making an overall judgment on acceptability.”

EPA appropriately applied this framework for the II&S source category in the Proposed Rule and determined that the risks, which are well below the presumptively acceptable threshold of 100-in-a-million, are acceptable and that the existing standards protect public health with an ample margin of safety. EPA’s modeling results indicated that the maximum individual cancer risk based on actual emissions was just 10-in-a-million, far below the 100-in-a-million upper end of presumptively acceptable risk. And as noted, the data on which that modeling was based significantly overstated emissions, in part because of a flawed test result.

Although the Benzene NESHAP rulemaking did not establish a presumptively acceptable risk range for non-cancer risks, the principles underlying its approach to cancer risks likewise

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9 54 Fed. Reg. at 38,046.
10 54 Fed. Reg. at 38,045.
support EPA’s finding of acceptable risk for chronic and acute non-cancer risks from the II&S source category. The maximum chronic non-cancer target organ specific hazard index ("TOSHI"), which is driven by arsenic and lead emissions, is 0.1, and no individuals are exposed to TOSHI levels at or above 1.0.\textsuperscript{12} Likewise, the maximum screening acute non-cancer hazard quotient ("HQ") is 0.3, and no facilities in the source category are estimated to have an HQ at or above 1.0 using any of the benchmarks EPA evaluates (\textit{i.e.}, reference exposure level ("REL"), acute exposure guideline level ("AEGL"), or Emergency Response Planning Guideline ("ERPG").\textsuperscript{13} All of these metrics support EPA’s reasonable conclusion that the II&S source category presents acceptable risk.

**B. EPA appropriately plans to rerun its risk model to correct inaccurate, outlier emissions input data and should, at the same time, correct numerous flawed modeling parameters, as doing so will show that the modeled risk levels are significantly lower than the already acceptable estimated in the proposal.**

Even with the finding that estimated residual risk is well below the presumptively acceptable threshold of 100-in-a-million, it is important that the risk characterization be accurate and, for that reason, EPA should make corrections to its prior model run that resulted in risk estimates being significantly overstated. The inflation of the proposed risk findings is not merely the result of EPA’s usual use of extremely conservative assumptions for modeling residual risk for Section 112 major source categories, but, instead, is indicative of errors in some of the data used, as well as inaccurate and inconsistent modeling assumptions. The comments below detail these errors and provide recommendations for appropriate, yet still very conservative, alternatives for EPA to incorporate in its risk modeling run to support the final RTR. Indeed, to meet the agency’s goals for transparency and accuracy in risk estimates these errors need to be corrected and the model rerun to reflect an accurate picture of the very low residual risk from the source category.

In its risk analysis, EPA identified fugitive emissions that it believed had not been adequately captured by modeling of emissions from emission point sources. EPA termed these emissions “UFIP” or unmeasurable fugitive intermittent particulate emissions.\textsuperscript{14} The very designation EPA created for these emissions indicates that emissions estimates are challenging – the emissions are indeed “unmeasurable” because they are fugitive, many are not routine, and there is no accepted EPA standard test method to measure them. Indeed, as a part of the steel production process, these intermittent emissions are already minimized by utilizing sound industry practices that are arrived at through case-by-case analyses for each plant. In fact, EPA acknowledges that “given the uncertainties regarding nonpoint sources . . . we expect that the risk results would over-predict the actual risks.”\textsuperscript{15} Further, they are particulate matter emissions, which means that only a fraction of the material is comprised of hazardous air pollutants ("HAP"). EPA faced a challenge in developing model inputs for these emissions in that estimating fugitive intermittent emissions from numerous small emission points at several plants. Accordingly, the decision was made to

\textsuperscript{12} Id.
\textsuperscript{13} Id.
\textsuperscript{14} See EPA Docket Nos. EPA-HQ-OAR-2002-0083-0953 (AMOS), 0915, 0793, 0790, 0801, 0964, 0958, 0781, 0939, and 0779.
\textsuperscript{15} 84 Fed. Reg. at 42,719.
review the risk presented by a “worst case” facility (Facility No. 18089110000398374), reasoning that if the risk modeled from this facility was acceptable, it would be rational to conclude that the other sources in the category also present acceptable risk. A basic premise employed by EPA in modeling the risks for this rulemaking is that by looking at the largest facility in the closest proximity to a large population EPA can be assured that risk levels for all of the sources in the category are below the levels modeled for this worst case plant. While we have strong concerns that the EPA’s analysis overstates risks from this source, EPA’s premise that modeling acceptable risk from the worst case facility allows EPA to conclude that others in the category also present acceptable risk is sound. Below we explain why the estimates developed for Facility No. 18089110000398374 overstate emissions inputs and should be revised; EPA can reasonably conclude that the risk estimates after such revision will still overstate risk for the remaining facilities in the source category.

1. The model inputs for Facility No. 18089110000398374 (the “example facility”) were inaccurate and hence overstated emissions and ultimately risk; further, this facility has more furnaces and is located in a more populous area than other source category facilities, such that even with accurate inputs, it overstates risk from other facilities in the category.

EPA modeled risk from Facility No. 18089110000398374 using inputs extrapolated from 2012 stack test results. Unfortunately, some of these test results are not valid due to anomalies in the testing and processing of the data. Initially, EPA had appropriately flagged the data as suspect given that the results were not in line with data from other test runs completed at Facility No. 18089110000398374 at the same time, nor with similar industry sources. reasoning that, at that time, other representative data from the example facility were not available, it proceeded to model risk using those data, notwithstanding concerns raised in the Risk Analysis Report. The Risk Analysis Report, which was prepared by modeling experts, explains that Facility No. 18089110000398374’s data constituted an “extreme outlier” when compared with the test results from other regulated sources in the category. The original model runs present risk in a manner that is misleading to the public and inconsistent with core EPA policies.

The Risk Analysis Report presents compelling evidence that Facility No. 18089110000398374 reported test results are invalid and need to be discarded. For example, the Risk Analysis Report explains that the 2012 Facility No. 18089110000398374 data were associated with a failure to follow best practices for EPA’s Test Method 29. Under Method 29, sample results should be accompanied by a reagent blank and a filter blank to allow for blank corrections by the laboratory, e.g., to correct for contaminated reagents and filters. For the Facility No.

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16 Email from Donna Lee Jones to Peter Pagano, re: representative emissions file for risk screening analysis, (Dec. 15, 2014) EPA Docket No. EPA-HQ-OAR-2002-0083-0710.
17 EPA Docket No. EPA-HQ-OAR-2002-0083-0801. We note that this decision was not appropriate because not having other representative data is insufficient reason to utilize data that are believed to be invalid.
18089110000398374 casthouse baghouse stack test conducted pursuant to EPA’s ICR on June 11-12, 2012, the laboratory, Element One, Inc. (“ELM”) of Wilmington, North Carolina, did not receive a reagent and filter blank from the stack tester, Environmental Quality Management, Inc. (“EQM”), as required by Section 29.9 of the test method. Therefore, the sample results could not be blank corrected for arsenic. The Risk Analysis Report goes on to explain the likelihood that the arsenic detections in the four samples constitute false positives due to arsenic-contaminated reagents and/or filters. Because the laboratory did not receive a reagent blank or filter blank from EQM as part of Facility No. 18089110000398374’s Blast Furnace No. 14 casthouse baghouse sampling, there is no way to validate retroactively the extent of the corrections that were needed.

The blank correction failure had significant consequences in the emissions calculations for UFIP sources and for the modeling run that EPA conducted at Facility No. 18089110000398374, since arsenic was the risk driver. There are strong indications that blank corrections would have made significant adjustments in the measured value of arsenic. Indeed, the presence of arsenic in the four samples is particularly significant given that testing done by the same stack testing company, EQM, at another source at the same facility the previous week (Boiler No. 6 on June 4, 2012) properly recorded a reagent and filter blank, which showed significant arsenic contamination. The reagent and filter blank provided from that stack test to the laboratory was contaminated with arsenic. First Analytical Laboratories (“FAL”) of Raleigh, North Carolina, performed the analyses for the Boiler No. 6 sampling and reported a high concentration of arsenic in the associated reagent and filter blank sample provided by the stack tester.

The Boiler No. 6 and Blast Furnace No. 14 sampling events likely utilized filters and reagents from the same lots. Unfortunately, the recorded reagent and filter lot numbers cannot be definitively reconciled because the stack tester has undergone a system upgrade since 2012 when these samples were taken and the documentation to verify the reagent and filter lot numbers is no longer available. The blank results reported by FAL in Analysis Report 120603 for the Boiler No. 6 sampling revealed a high arsenic level of 219 µg, which was confirmed by several analyses. The reported concentrations shown in Table 4 of the Risk Analysis Report strongly suggest that the same reagent and/or filter lot was used during both sampling events and that the filter or reagents were contaminated with arsenic. All of this information indicates that the analysis of the test results reported arsenic emissions that were in fact not present in the gas stream and it would be unreasonable for EPA to use such results in its regulatory analysis, regardless of whether the facility later retested.

In addition to the blank correction failure in the Facility No. 18089110000398374 2012 stack test data, the Risk Analysis Report also provided EPA with information pointing out that the data represented an extreme statistical outlier from the remainder of the source category data. Nothing unique to Facility No. 18089110000398374’s operational configuration suggests any reason to find the extreme outlier data as representative of normal operation for Facility No.

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20 Id. at 5-6.
21 Id. at 6.
22 Id.
23 Id. at Table 4.
18089110000398374, or for that matter, for the rest of the industry. Facility No. 18089110000398374’s operational configuration has a similar process to the rest of the industry.\textsuperscript{24} The Risk Analysis Report also points to the results of a casthouse baghouse dust analysis at the same Facility No. 18089110000398374 Blast Furnace No. 14 stack, and the discrepancy between the Facility No. 18089110000398374 2012 stack test data and the basic oxygen process shops emissions data, both of which demonstrated much lower arsenic levels.\textsuperscript{25}

As noted, all of the above indicate that EPA should have discarded this test information. To further support a more accurate risk assessment and more reliably confirm facility emissions, the owner of Facility No. 18089110000398374 took the additional step of conducting new testing by a certified stack testing company to determine the appropriate model inputs. On December 19, 2018, stack testing company Mostardi Platt completed testing at Facility No. 18089110000398374’s #14 blast furnace casthouse baghouse stack,\textsuperscript{26} the same source of the earlier outlier data. The stack testing company utilized the same methodology required for the ICR test conducted in 2012 as a part of this RTR rulemaking. Method 5 was used to conduct the test to measure particulate matter (“PM”), and Method 29 was used to conduct the test to measure metallic HAP. The original 2012 stack test result for arsenic of 34.86 micrograms/dscm decreased to 0.43 micrograms/dscm in the 2018 retest, and the 2012 arsenic level of 0.000154 pounds/ton decreased two orders of magnitude to 0.00000298 pounds/ton in the 2018 retest. The reported results for the 2012 stack test of the same source had an arsenic HAP/PM ratio of 0.0176, which was significantly greater than other facilities in the industry and is an extreme outlier.\textsuperscript{27} The 2018 stack test results, on the other hand, show an arsenic HAP/PM ratio at Facility No. 18089110000398374 two orders of magnitude lower, at 0.000286. The 2018 arsenic HAP/PM ratio is now similar to that of other facilities. Figure 1, below, shows the discrepancy between the 2012 Facility No. 18089110000398374 arsenic HAP/PM ratio as compared to other facilities tested pursuant to the ICR in 2012. Figure 1 demonstrates that Facility No. 18089110000398374’s 2012 stack test results should have been discarded based on that discrepancy alone. Given the new 2018 stack test results shown in Figure 2, which corroborate the Risk Analysis Report, discarding of the 2012 outlier as invalid data is compelled.\textsuperscript{28}

\textsuperscript{24} Id. at 7-8.
\textsuperscript{25} Id. at 8-9.
\textsuperscript{27} Id. at 5.
\textsuperscript{28} The 2018 stack testing data and additional relevant analysis was submitted to EPA on February 4, 2019. Letter from Paul Balserak, Vice President, Env’t, AISI to Chuck French, Sector Policies & Programs Div., OAQPS, EPA (Feb. 4, 2019), EPA-HQ-OAR-2002-0083-0804 (Attachment B).
Figure 1. Comparison of Facility No. 18089110000398374 2012 Results with Other Facility Results

Arsenic HAP/PM Ratio from ICR Test Data

- 18089110000398374
- 18089110000397829 (1)
- 18089110000397829 (2)
- 18089110000397794
- 39017110000392557
- 18127110000607558 (1)
- 18127110000607558 (2)
- 261631100027375668
- 420000000011116934
- 171191100017423171
EPA explains in the Proposed Rule that it lacked sufficient time to incorporate this new test data and revise its risk analysis accordingly prior to issuing the proposal. The Agency also states that the uncertainty behind much of the analysis of the UFIP emissions “leads us to conclude that the risk results that include nonpoint sources are a qualitative indicator of the potential risk, rather than a true quantitative analysis . . . .” Thus, EPA appropriately anticipated that “once we incorporate the new test data into our analyses and rerun our risk model, the risks will be lower than the risk estimates presented” in the proposal.\(^\text{29}\)

AISI/USS support EPA’s commitment to using current and accurate information in its risk analysis. The risk modeled from UFIP emissions has been vastly overstated and correcting it will improve the accuracy of the conservative risk estimates.

Finally, as noted above, in addition to modeling source-wide risk, EPA explains in the proposal that in order to analyze risk from UFIP emissions, it determined to model the risk for the II&S source category by modeling Facility No. 18089110000398374 as a so-called “worst case”

\(^{29}\) 84 Fed. Reg. at 42,721.
scenario facility. With four blast furnaces, compared to one or two blast furnaces at other steel plants that average less than 50% of Facility No. 18089110000398374’s capacity, modeling Facility No. 18089110000398374 would clearly overestimate the risk that would be posed by other facilities in the industry in terms of scale. Given this size and capacity discrepancy with the rest of the industry, even accurately modeled risk for Facility No. 18089110000398374 would represent a significant overestimate of risks potentially posed by emissions from the other II&S facilities.

Modeling the inhalation risk of Facility No. 18089110000398374 (including both point source and nonpoint source emissions) using the appropriate retest data, together with other corrections to the inputs described below for the modeling results for the entire source category, revises the risk downward. As shown in Table 1 below, using the more appropriate modeling inputs, the risk at Facility No. 18089110000398374 drops by more than half, from 24-in-a-million to approximately 9-in-a-million, and reduces the population exposed to a greater than one-in-a-million cancer risk by more than a factor of five.

Table 1: Risk Results for Example, Worst Case Facility with UFIP Sources

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Facility</th>
<th>Category Risk (Actual Emissions)</th>
<th>Category Risk (Allowable Emissions)</th>
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</thead>
<tbody>
<tr>
<td>EPA Modeling</td>
<td>Example Facility (Facility No. 18089110000398374)</td>
<td>24.0</td>
<td>0.12</td>
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<tr>
<td>Revised Modeling</td>
<td></td>
<td>7.87</td>
<td>0.04</td>
</tr>
</tbody>
</table>

2. Comparison of ambient monitor data near Facility No. 18089110000398374 and from other facilities in the source category to Facility No. 18089110000398374 further supports using the updated Facility No. 18089110000398374 information.

One commenter wrongly asserts that data from ambient monitors near Facility No. 18089110000398374 validate EPA’s inappropriate model that is reliant upon inaccurate data. A review of ambient data in the vicinity of Facility No. 18089110000398374 disproves this claim. Figure 3 below illustrates that based on EPA’s assumed inputs the modeled arsenic concentration would be greater than 0.0028 µg/m³, which is 3.0 times greater than the average arsenic concentration that EPA Region V found in a five-and-a-half month study of PM10 conducted a quarter of a mile from Facility No. 18089110000398374 in 2013. The same commenter noted that ambient data showed high manganese concentrations near the reference concentration. EPA

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Region V’s study provided an average manganese concentration of 0.083 µg/m³, however, which is well below the 2012 updated Agency for Toxic Substances and Disease Registry (“ATSDR”) reference concentration value of 0.30 µg/m³ for manganese. Based on this thorough study of ambient monitor data in the vicinity of Facility No. 1808911000398374, it is clear that EPA’s flawed modeling results are not validated by ambient data.

Figure 3. EPA Modeled Concentration vs. Monitored Concentrations

Additionally, some of EPA’s technical support memoranda imply that data from other facilities validates the use of the invalid Facility No. 1808911000398374 data, which is simply incorrect. EPA’s technical memorandum regarding development of the rule includes a table listing

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32 Id. at 3.
33 ATSDR, *Toxicological Profile for Manganese*, at 22, 24 (Sept. 2012), http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=102&tid=23. Note, the 2013 EPA Region V ambient study did not mention the newer, less stringent manganese ATSDR concentration of 0.30 µg/m³ in the 2012 update.
34 See, e.g., Mem. from Donna Lee Jones, EPA to II&S RTR Project File, *Development of Emissions Estimates for Fugitive or Intermittent HAP Emission Sources for an Example II&S Facility for input to the RTR Risk Assessment*, at 11 (May 1, 2019), EPA-HQ-OAR-2002-0083-0956.
HAP to PM ratios for arsenic emissions (lb arsenic / lb PM) at facilities in the source category, in which Facility No. 18089110000398374 (using the invalid 2012 stack test data) is ranked second, behind the Fairfield, Alabama casthouse baghouse, which is no longer in operation.\textsuperscript{35}

A review of test reports from the Fairfield facility identified issues with the testing, however, that likely inflated the arsenic emissions and thus demonstrate that the apparently higher arsenic HAP to PM ratio for Fairfield than Facility No. 18089110000398374 is not evidence that EPA correctly or appropriately estimated arsenic emissions at Facility No. 18089110000398374. High levels of arsenic were detected in the field blank, suggesting that significant concentrations of arsenic exist in either the background, the sampling train, or the reagents used in the testing, thus biasing the results high and rendering them inaccurate. The Fairfield calculations are also shown not to reflect realistic emissions based on ambient monitor data in the facility’s vicinity. Ambient monitor data for the Fairfield facility, Facility No. 18089110000398374, and Facility No. 26163110027375668 all showed similar arsenic concentrations, as shown in Figure 4 below, while the blast furnace test data varied significantly (270.0 micrograms/dscm at Fairfield, 37.8 micrograms/dscm at Facility No. 18089110000398374, and 0.87 micrograms/dscm at Facility No. 26163110027375668). This ambient monitor data demonstrates that the high outlier Fairfield data does not validate the use of the extreme outlier and invalid Facility No. 18089110000398374 2012 stack test data.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{arsenic_concentrations}
\caption{ArSENIC ConcentrATIONS IN AMbIENT MONITOR DATA}
\end{figure}

\textsuperscript{35} Id. at App. D.
3. The modeling on which the proposal is based is also problematic in its unprecedented and flawed scale-up methodology for UFIP HAP emissions.

To model inhalation risk in the proposal, EPA adopted a novel approach to scale monitored arsenic PM$_{10}$ data up to arsenic total suspended particulate ("TSP") using inappropriate surrogate metals (lead and manganese), while ignoring background arsenic concentrations. EPA used this approach to account for the reliance on the Facility No. 18089110000398374 2012 outlier stack test data, prior to the Agency receiving the December 2018 retest results. The *Risk Analysis Report* details the concerns attendant to the scale-up methodology during the development of the proposal. In particular, AISI/USS highlight that the *Risk Analysis Report* shows that data from ambient monitors in the vicinity of the Facility No. 18089110000398374 facility demonstrated the flaws in using invalid data (and an extreme outlier) in the modeling analysis. The *Risk Analysis Report* also explains that lead and manganese are *not* appropriate surrogates to scale arsenic PM$_{10}$ to arsenic TSP because they differ from arsenic in important ways. Specifically, arsenic sublimates at much lower temperatures, and elevated temperatures during the iron and steelmaking processes would result in more arsenic in the vapor phase of the process than either lead or manganese, which melt at higher temperatures. Because of this, arsenic is more likely to accumulate on fine, rather than coarse, particles, which is the opposite of lead and manganese. Thus, the TSP to PM$_{10}$ ratio should be much lower for arsenic than for lead or manganese. EPA should abandon the scale-up analysis in the modeling for the final rule.

4. If a scale-up continues to be used, the scale-up for TSP utilized in the proposal for inhalation risk needs to be revised to model based on the PM$_{10}$ fraction, consistent with best modeling practices.

EPA modeled arsenic emissions using a scale-up to TSP. This approach is not necessary to model inhalation risk and should be corrected because larger particles are not inhaled and the size range should be limited to PM$_{10}$, which is a more appropriate and accepted measure for modeling inhalation risks. Indeed, EPA’s own documents demonstrate that the Agency has agreed with this inhalation risk modeling approach in the past. For example, in 2002, EPA recommended PM$_{10}$ as the most appropriate fraction for evaluating exposure to toxic metals. The Agency also primarily monitored “PM$_{10}$ HAP Metals” in its 2009 School Air Toxics Ambient Monitoring Plan. A subsequent study published by EPA also recognizes this point, stating that “[w]ith the exception of lead (for which the [National Ambient Air Quality Standards ("NAAQS")]) was developed with explicit recognition of non-inhalation exposure pathways), metals screening levels

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36 Mem. from Donna Lee Jones, EPA to II&S RTR Project File, *Development of Emissions Estimates for Fugitive or Intermittent HAP Emission Sources for an Example II&S Facility for input to the RTR Risk Assessment*, at 20 (May 1, 2019), EPA-HQ-OAR-2002-0083-0956.

37 *Risk Analysis Report* at 11-17, EPA-HQ-OAR-2002-0083-0801.


are more suited for use with the concentration of metal in particles captured in a PM\textsubscript{10} sample.\textsuperscript{40} EPA has not explained why it departed from its historic practice in this rulemaking, particularly given that its own modeling expert indicated that the use of the PM\textsubscript{10} fraction to model inhalation risk is appropriate.\textsuperscript{41}

Other agencies have also recognized that PM\textsubscript{10} is the appropriate size to measure particulate inhalation risk. The Pennsylvania Department of Health ("DOH"), for example, has stated that in evaluating “public health implications associated with exposure to toxic metals in the air, it is appropriate to use ambient airborne particulate matter with aerodynamic diameters of 10 microns or less . . . [and that] total suspended particulate is not a valid indicator of health related exposure.”\textsuperscript{42} Pennsylvania DOH explained that “[m]etal concentrations of PM\textsubscript{10} are more reliable for health based screening because they better represent inhalable particles into the lungs.”\textsuperscript{43} Scaling up the PM\textsubscript{10} monitor concentrations to a theoretical TSP monitor concentration is therefore unjustified for the inhalation risk assessment.

To better assess modeled inhalation risk in this instance, Table 12.5-2 of EPA’s AP-42 provides ironmaking and steelmaking particle size data that can be used to calculate the PM\textsubscript{10} fraction from arsenic TSP estimated emissions, using a PM\textsubscript{10} fraction of 51%.\textsuperscript{44} Baghouse dust particle size PM\textsubscript{10} fraction data from Facility No. 18089110000398374’s Blast Furnace No. 14 in 2018, which AISI submitted during the development of the proposal, shows that approximately 54% of the arsenic TSP was PM\textsubscript{10} or less,\textsuperscript{45} as compared with AP-42’s 51%. This 54% fraction could be used to calculate or scale-down ICR Method 29 arsenic PM results to arsenic PM\textsubscript{10} emissions, to better assess the modeled inhalation risk from the related blast furnace casthouse and other UFIP sources. The modeling results using PM\textsubscript{10} emissions could then be compared to the ambient PM\textsubscript{10} monitor data. EPA’s use of TSP model inputs over-estimates the inhalation risk.

\textsuperscript{40} EPA, \textit{Schools Air Toxics Monitoring Activity (2009) – Uses of Health Effects Information in Evaluating Sample Results}, at 6-7, Table 1 n.2 (Sept. 10, 2009), \url{https://www3.epa.gov/air/sat/pdfs/UsesOfHealthEffectsInfoinEvalSampleResults.pdf}.

\textsuperscript{41} Email from Ted Palma, Office of Air Quality Planning and Standards (OAQPS), EPA to Donna Lee Jones, \textit{et al}., \textit{Re: EPA leak emission factor - explained, proposed new approach; need comments COB today} (Apr. 25, 2018), EPA-HQ-OAR-2002-0083-0793 (“From a risk assessment perspective we can use the PM\textsubscript{10} fraction of arsenic for the inhalation analysis.”).


\textsuperscript{43} Id.


\textsuperscript{45} Beckman Coulter LS Particle Size Analyzer at 2, Attach. to Letter from ALS Environmental to U. S. Steel regarding USS Gary – 14 Casthouse Baghouse Dust (Apr. 11, 2018) (showing that for a dust channel diameter between 9.370 µm and 10.29 µm the cumulative volume percentage would be between 53.3% and 55.2%; based on this, an approximation of 54% was utilized in the analysis).
5. EPA should revise inputs related to chromium (VI).

EPA’s modeling in the Proposed Rule also overestimates risk based on chromium (VI) emissions from the blast furnace casthouse at Facility No. 17119110017423171. This overestimation can be explained based on the inclusion of suspect data from that facility that should have been omitted from the emissions calculations and modeling. When EPA reruns the risk model to reflect accurate data, it should therefore also correct inaccurate data inputs regarding chromium emissions, which overestimate risk from chromium (VI). AISI previously explained to EPA that “applying the Method 0061 ratio of hexavalent chromium to total chromium indiscriminately to the Method 29 total chromium results will result in flawed, overstated concentrations of hexavalent chromium,” and that this flawed methodology “explains why the EPA-provided dataset showed hexavalent chromium levels approaching and exceeding 100% of the total chromium in several cases.”

Facility No. 17119110017423171 modeled the highest risk for point sources in the Proposed Rule, largely due to emissions of chromium (VI) compounds. The emission inputs for chromium (VI) at this facility were flawed, however, because the data included a greater estimate of chromium (VI) for the blast furnace casthouse, at 52 lbs/year, than for total chromium, at 12 lbs/year, which is technically impossible. It is not possible for there to be fewer total chromium emissions than chromium (VI), which is one element of total chromium. This alone should be enough for EPA to conclude that these data are flawed and not to use them. The chromium (VI) value also exceeds the chromium (III) value at this facility, which, though technically possible, is unlikely to be correct since it is not the case for any other facility in the source category and the industry average ratio of chromium (VI) to total chromium of the other casthouse facilities was 4.2%. Because the Facility No. 17119110017423171 chromium (VI) value is so much greater than any other value in the source category, and the chromium (III) value is in keeping with the industry trend, it is more likely that the chromium (VI) value is inaccurately inflated. A similar issue occurred with emissions data from Facility No. 26163110000497141 and to its credit, EPA appropriately removed the data from the dataset and acknowledged that Method 29 is more accurate than Method 0061. The proposal does not provide justification for EPA’s failure to similarly omit the flawed Facility No. 17119110017423171 data. AISI submitted a comment letter to EPA on March 13, 2015, that identified the inappropriate methodology planned to be used by EPA that can result in “calculated” chromium (VI) estimates that would provide flawed results greater than total chromium, and we urge the agency to review that letter and incorporate changes in any final action.


This issue is significant to the risk modeling because the Facility No. 17119110017423171 chromium (VI) emissions value represents 68% of the industry total for chromium (VI) emissions and is an order of magnitude higher than at any other blast furnace in the industry. Thus, the industry total also appears suspect and should be recalculated without the flawed Facility No. 17119110017423171 data. As a means of demonstrating the importance of correcting this problem, AISI and U. S. Steel calculated an industry average ratio of chromium (VI) to total chromium for blast furnaces and basic oxygen processing furnace (BOPF) shops without the flawed and suspect data from Facility No. 17119110017423171, then multiplied that industry average ratio by the source’s total chromium emissions to better estimate an accurate chromium (VI) rate. Applying that calculation to the Facility No. 17119110017423171 blast furnace reveals that EPA’s estimates in the Proposed Rule are likely overestimated by more than 100 times. As a result, EPA estimated a chromium (VI) emission rate 52 lbs/yr in the proposal, compared to the 0.5 lbs/yr emission rate using the more appropriate industry average ratio calculation. A similar calculation for the Facility No. 17119110017423171 BOPF shop likewise would reduce the chromium (VI) from 87 lbs/yr to 17 lbs/yr. These calculations illustrate the importance of correcting the chromium emission data from Facility No. 17119110017423171 to model risk for the final rule.

6. The modeled risk results in the Proposed Rule incorporate an unrealistically low control efficiency for blast furnace casthouse fume suppression and BOPF shop building capture.

The proposal uses an unrealistically low control efficiency for blast furnace casthouse fume suppression systems and no control efficiency for BOPF shop building enclosures as inputs to the model. These assumptions have significant bearing on the overall emissions estimates, and thus risk, from the source category. The absence of any BOPF shop building capture efficiency leads to inflated risk assumptions for fugitive emissions, while the inappropriately low blast furnace casthouse fume suppression assumptions yield increased emissions and risk from both point sources and fugitive emissions sources. EPA should correct its lack of and unreasonably low control efficiency assumptions for both sources in the final rule.

For blast furnace casthouses, EPA assumes a 75% reduction efficiency in uncontrolled particulate emissions from blast furnaces with suppression systems but without baghouses. This assumption is a significant departure, for which the rulemaking record provides no technical justification, from several EPA documents and industry permits that reflect a long-accepted control efficiency of 90% for such blast furnace casthouse suppression systems.

EPA Region V expressed support for the 90% control efficiency during the development of the Lake County, Indiana State Implementation Plan. For example, in 1985, EPA Region V sent a letter to the Indiana Air Pollution Control Board commenting on proposed revisions to the Lake County control PM plan. These comments stated: “The mass emission limit for blast furnace casthouses Nos. 4, 6, 7, and 8 is 0.06 lb/ton of hot metal. This limit reflects a control efficiency
of 90 percent which Region V believes corresponds to an opacity limit of 20 percent on a 6-minute average basis.”

Also in 1985, an internal EPA Region V memorandum specifically referenced casthouse suppression controls representing 90% control and Reasonably Available Control Technology (“RACT”). That memorandum stated (with respect to the former J&L Steel (“LTV”) blast furnace casthouses with suppression systems in Lake County, Indiana) as follows: “The Region agrees that the site-specific opacity limits for casthouses (20%, 6-min average) should result in 90% control.”

Lastly, in 1999, the Ohio Environmental Protection Agency issued a permit to install for a Wheeling Pitt facility that included a 90% reduction in PM emissions based on the use of a suppression system. The reasoning that supported the use of a 90% control efficiency for blast furnace casthouse fume suppression in these documents remains valid today, and a 90% control efficiency is still appropriate. Suppression systems have employed similar technology since that time and should be assumed to have improved since then, not to have become less effective, as the proposal’s use of a 75% control efficiency would imply. Using the 90% control efficiency level meaningfully impacts the modeling, and should be adopted in the final rule.

For BOPF shops, EPA failed to include any building capture control efficiency associated with the mostly enclosed facilities whatsoever. Similar to the assumptions for blast furnace casthouses, the failure to take into account existing emissions reductions occurring based on the enclosed BOPF shop operations leads to significantly overestimated emissions and thus risk. In the final rule, EPA should apply a 71.8% building capture efficiency for BOPF shops, which is supported by EPA’s AP-42 Table 12.5-1. Numerous past permits and other references available in the literature support use of a building capture efficiency of this degree. In other RTRs as well, EPA has assumed a fallout rate for emissions inside a building, and EPA has not explained why it did not do so here.

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51 Risk Analysis Report at Attach. 11, Wheeling Pitt Facility Permit to Install, Ohio Environmental Protection Agency (1999), EPA-HQ-OAR-2002-0083-0801.
52 Email from Colin Carroll, AISI to Donna Lee Jones, EPA, AISI Preliminary Comments on U.S. EPA Draft Fugitive Emission Calculations (Aug. 30, 2017), EPA-HQ-OAR-2002-0083-0775 (basis for AP-42 Table 12.5-1).
7. The approach used to estimate risk from allowable emissions in the proposal inappropriately exaggerates risk and should be revised.

The proposal estimates a 70-in-a-million cancer risk to the maximum exposed individual based on allowable emissions. Although this value is firmly within the presumptively acceptable range, it does not appropriately reflect risk from allowable emissions within the source category due to a number of methodological flaws. The allowable risk figure is based on Facility No. 42003110001116934, for which arsenic is the allowable emissions risk driver from the BOPF primary baghouse and arsenic, chromium (VI), and nickel are the allowable emissions risk drivers from the BOPF secondary baghouse. First, a review of the facility test reports identified extreme run-to-run variability, with one of the three test runs being approximately 350 times higher for arsenic emissions than the next highest run at the BOPF primary baghouse. Additionally, high contamination of the blank sample was identified, but no blank correction was done. This flaw creates the possibility (and even likelihood) that the results are inaccurately biased high for the BOPF primary baghouse. The approach to calculating allowable emissions compounded these problems, as EPA scaled up the fraction of each metal HAP by the ratio of total PM actuals to the allowable PM under the existing Subpart FFFFF standards. EPA’s approach results in an inappropriate ratio that calculates unrealistically high emissions. In particular, for Facility No. 42003110001116934, EPA applied an elevated ratio of wet scrubber stack results of 8.59, multiplied by 0.246 tons per year of actual arsenic emissions, to calculate an allowable emission rate of 2.1 tons per year of arsenic for the BOPF primary baghouse and a ratio of approximately 75 for the BOPF secondary baghouse, resulting in 0.06 tons per year of arsenic, 0.14 tons per year of chromium (VI) and 1.58 tons per year of nickel. The ICR required facilities to capture PM with a filter temperature of 320°F, whereas Method 5, which is used under the Subpart FFFFF rule, specifies a filter temperature of 248°F. Because PM collected at 320°F will include less mass than PM collected at 248°F, applying this ratio of PM, determined at different temperatures, to HAP metals is technically flawed and will incorrectly overstate the risk associated with the allowable mass of the individual metal HAPs. EPA could more appropriately model allowable emissions by scaling the emissions levels from the production levels in the ICR data to the production levels of the maximum production rate. Using this approach, for Facility No. 18089110000398374, the allowable emissions were recalculated based on the maximum (design) capacity of each source in comparison to the actual production rates submitted in the ICR. EPA’s actual to allowable scale-up factors were as high as 70 times the actual rates. Based on the maximum capacity of the source, the scale-up factors were revised and are now less than three. EPA’s approach to calculating allowable emissions in the II&S source category Proposed Rule significantly overestimates risk and should be revised to reflect more realistic allowable emissions.


56 We note that the scale-up factors of less than three achieved using the recommended approach are in keeping with scale-up multipliers used by EPA to estimate allowable emission in other RTRs. See, e.g., EPA, Residual Risk Assessment for the Primary Aluminum Production Source Category in Support of the September 2015 Risk and Technology Review Final Rule, Appendix 1, at 22 (Sept. 2015), EPA-HQ-OAR-2011-0797-0425 (applying factors between 1.5 and 1.9 to multiply actual emission rates to estimate allowable emission rates).
8. EPA should remove other extreme outlier data from its modeling inputs.

The ICR dataset for Facility No. 4200310001116934, the same facility used to reflect inappropriately inflated allowable risk discussed above, included one extreme outlier among the three stack test runs for its BOPF primary oxygen furnace. That single result was approximately 350 times the other two test run results and resulted in a lb/ton emission factor roughly 350 times those remaining runs. Despite this extreme run-to-run variability, EPA nonetheless incorporated the extreme statistical outlier data into its risk modeling. As described above, the outlier test result is further called into question by the industry’s review of the facility’s test reports, which identified high contamination of the blank sample and no blank correction performed for this stack testing. These factors suggest that the BOPF primary oxygen furnace results are likely inaccurate and biased high. In light of these concerns, AISI omitted the suspect data point and instead used the next highest single test run value from all BOPF primary oxygen furnace tests (1.63E-06 lb/ton of arsenic) in place of the three-run average that EPA incorporated (1.49E-04 lb/ton of arsenic). EPA needs to adopt this change in its modeling for the final rule.

9. EPA should remove permanently out of operation facilities from the risk modeling.

The proposal discusses 11 facilities in the source category, but the final rule analysis should reflect only the 10 operating facilities, as the AK Steel Ashland facility permanently ceased production. To estimate residual risk from the II&S source category, EPA includes emissions from 11 facilities. Today, however, the source category contains only 10 operating facilities. On January 28, 2019, AK Steel announced plans to permanently close its facility in Ashland, Kentucky by the end of 2019. This facility has not been in operation since 2015. As a result, this facility is no longer in operation and should not be factored into the source category’s residual risk. Reflecting the current state of the industry is important to accurately determine the source category’s emissions and associated risks after implementation of the existing Subpart FFFFF standards. EPA should thus revise its modeling and calculations for the source category to reflect the permanent shutdown of the Ashland facility to support the final rule.

10. EPA should correct the flawed assumptions of fish ingestion rates for multipathway risk modeling to reflect sound science.

The multipathway risk assessment in the proposal utilizes unrealistically high fish ingestion rates. Selecting appropriate fish ingestion rates is critical to achieving accurate residual risk findings, as they influence multipathway risk assessments for both cancer and non-cancer health endpoints. The fish ingestion rates selected in the Proposed Rule are extremely high, assuming that adults consume 373 grams per day, and children consume somewhere between 107.7

and 331 grams per day, depending on their age. These rates are not just unrealistically high; they are also based on flawed and outdated sources that do not reflect sound science. This conclusion is consistent with the assessment of EPA’s Science Advisory Board (“SAB”), which recently reviewed the assumptions and parameters EPA employs in its screening analyses for RTR rulemakings. The SAB observed that the fish ingestion rates, which are the same ones used in the Proposed Rule, are overly conservative and recommended that the agency use “other data available to make more realistic assumptions . . . to estimate fish consumption.”

AISI previously prepared and submitted in comments on another RTR an extensive literature review of fish ingestion rates, see Attachment E, which provides a thorough critique of the studies underlying EPA’s fish ingestion rate assumptions. The industry recommends that EPA use the same fish ingestion rates to model multipathway risk for the final rule in the II&S source category as AISI recommended for use in the Coal- and Oil-Fired Electric Utility Steam Generating Units rulemaking. Namely, we recommend using a fish ingestion rate of 28.3 grams per day for adults and a range of 6.7 to 13.3 grams per day for children, varying by age. These rates are more realistic and are drawn from more recent and scientifically appropriate studies.

11. Rerunning the inhalation risk model as recommended above reflects residual risk significantly lower than the proposal’s already low, acceptable risk.

Modeling risk using accurate emissions inputs and the appropriate modeling parameters recommended in the foregoing comments will yield significant reductions in risk estimates. Table 2 below presents EPA’s overestimated risk calculations in comparison with the more realistic inhalation risk estimates using updated, accurate data and assumptions. As the table clearly shows, incorporating the reasonable data and modeling inputs that we recommend will significantly reduce modeled risk from the II&S source category across every parameter that EPA evaluates in its residual risk analysis.

<table>
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<tr>
<th>Table 2: Source Category Risk</th>
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</tr>
<tr>
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<td>Corrected</td>
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</table>

61 Id. at 2.
As Table 2, above, shows, correcting the flawed inputs and assumptions in the risk modeling for the Proposed Rule will have a profound impact on the residual risk estimates and should be done before the RTR is finalized. Further, the corrected modeling inputs have significant impact on each of the individual facilities in the source category, as demonstrated below for actual emissions from point sources in Table 3 and allowable emissions for point sources in Table 4. Whole facility risk (i.e., from both point and nonpoint sources in the source category and other sources not in the II&S source category) would be similarly reduced by the numerous corrections to the inhalation risk modeling that we recommend here. Finally, AISI/USS note that the recommendations above will also drive multipathway risk changes, so the risk analysis for that should also be corrected accordingly.

Table 3: Actual Emissions, Point Sources

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<th>Facility_NEI_ID</th>
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AISI/USS support and incorporate by reference comments submitted by the Coke Oven Environmental Task Force with respect to the overestimation of risk due to how coke oven emissions are estimated and modelled for the facility-wide risk of integrated iron and steel manufacturing facilities that operate coke batteries, including poor source characterization of coke batteries and non-speciation of COE emitted from controlled sources. AISI and U.S. Steel further note that, contrary to misguided suggestions by commenters who oppose EPA’s low-risk conclusions in the Proposed Rule, EPA’s approach to undertaking the RTR rulemakings for the II&S and Coke Oven source categories is appropriate and directly in accordance with the Clean Air Act’s creation of distinct source categories. EPA is under no obligation to coordinate the timing of rulemakings that may happen to affect similar facilities. Further, keeping the RTRs for different source categories, even co-located ones, is consistent with prior EPA practice. See Letter from Janet McCabe, Acting Assistant Adm’r, EPA Office of Air and Radiation, to Peter Pagano, Vice President, Env’t, AISI (June 15, 2015) (Attachment H). Moreover, the agency is afforded discretion in choosing when and how to allocate its resources to satisfy its statutory obligations.
### Table 4: Allowable Emissions, Point Sources

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<td>21019110009937738</td>
<td>3.7</td>
<td>0.0015</td>
</tr>
<tr>
<td>26163110000497141</td>
<td>2.4</td>
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</tr>
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<td>26163110027375668</td>
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<td>0.0054</td>
</tr>
<tr>
<td>39035110011945681</td>
<td>3.2</td>
<td>0.0081</td>
</tr>
<tr>
<td>42003110001116934</td>
<td>70.8</td>
<td>0.0514</td>
</tr>
</tbody>
</table>

To summarize, AISI/USS reached the above risk results by making the following adjustments to EPA’s modeling inputs:

1) Facility No. 17119110017423171 Casthouse Baghouse  
   a. Corrected the stack height, temperature, velocity, and diameter based on stack test information.
      i. The stack height was listed as 40 feet in EPA’s modeling file. It was changed to 60 feet 11.5 inches.
      ii. The temperature was listed as 66 degrees Fahrenheit in EPA’s modeling file. The temperature based on the stack test is 118.2 degrees Fahrenheit.
      iii. The exit velocity was listed as 25.66 feet/second in EPA’s modeling file. It was corrected to 35.48 feet/second.
      iv. The diameter was listed as 11 feet in EPA’s modeling file. It was corrected to 10 feet 11 inches.
   b. Actual/Whole Facility Emissions – Revised the chromium (VI) emission rate from 52 lb/year to 12 lb/year to reflect that the chromium (VI) emission rate cannot be greater than the total chromium emission rate, as chromium (VI) is a sub-category of total chromium. We conservatively used the total chromium emission rate in the updated modeling.
   c. Allowable Emissions – Scaled the 12 lb/year total chromium emission rate for the Actual/Whole Facility modeling by the same ratio EPA used (4.29442) to calculate the allowable emission rate. The revised allowable emission rate is 51.533 lb/year.
2) Facility No. 18089110000398374
   a. Revised all HAP metal emission rates for the blast furnace causthouses, blast furnace casthouse fugitives, beaching, blast furnace bell leaks, and blast furnace opening uptakes per the December 2018 stack test for Blast Furnace No. 14 for actual, allowable, and whole facility modeling scenarios. We conservatively employed the same actual to allowable scale up as EPA.
   b. Revised the arsenic emission rate for slag processing sources, as arsenic was the primary risk driver. We used the methodology in Tables 7 and 8 of the document entitled “Development of Emissions Estimates for Fugitive or Intermittent HAP Emission Sources for an Example II&S Facility for input to the RTR Risk Assessment” (EPA-HQ-OAR-2002-0083-0956) using the revised arsenic emission factor from the December 2018 stack test to recalculate these values.
   c. Revised the actual to allowable scale-up factor based on the actual production rates submitted in the ICR to the maximum production rates to calculate allowable emission rates as shown in Table 5:

   **Table 5. Revised Actual to Allowable Scale-Up Factors**

<table>
<thead>
<tr>
<th>Source ID</th>
<th>Source Description</th>
<th>Actual Production (tpy)</th>
<th>Maximum Production (tpy)</th>
<th>Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>CELM0020</td>
<td>No. 1 BOP CASBell/OB Lancing Stations Baghouse (SS3105)</td>
<td>1302821</td>
<td>1971000</td>
<td>1.513</td>
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<td>CELM0025</td>
<td>No. 1 LMF Baghouse (NS3135)</td>
<td>1189073</td>
<td>1971000</td>
<td>1.658</td>
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<td>CELM0027</td>
<td>No. 2 LMF Baghouse (NS3136) [5 stacks]</td>
<td>1225913</td>
<td>1971000</td>
<td>1.608</td>
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<tr>
<td>CELM0033</td>
<td>No. 3 LMF Baghouse (NS3137)</td>
<td>1314084</td>
<td>1971000</td>
<td>1.500</td>
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<tr>
<td>CEMT0015</td>
<td>No. 1 BOP Hot Metal Desulfurization Baghouse (SS3100)</td>
<td>1280467</td>
<td>2262270</td>
<td>1.767</td>
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<tr>
<td>CEOF0023 &amp; CEOF0024</td>
<td>No. 1 BOP Gas Cleaner North &amp; South (SS3103 &amp; SS3104)</td>
<td>2610483</td>
<td>6570000</td>
<td>2.517</td>
</tr>
<tr>
<td>CEOF0030 &amp; CEOF0031</td>
<td>No. 2 QBOP Gas Cleaner East &amp; West (NS3125 &amp; NS3126)</td>
<td>3260899</td>
<td>6570000</td>
<td>2.015</td>
</tr>
<tr>
<td>CEOF0032</td>
<td>No. 2 QBOP Secondary Emissions Control Baghouse (NS3124)</td>
<td>3260899</td>
<td>6570000</td>
<td>2.015</td>
</tr>
<tr>
<td>CESP0043 &amp; CESP0044</td>
<td>Sinter Plant Windbox Baghouse No. 1 &amp; No. 2 (IS3203 &amp; IS3204)</td>
<td>1591611</td>
<td>3942000</td>
<td>2.477</td>
</tr>
</tbody>
</table>

d. No stack parameters or locations were modified.
3) Facility No. 42003110001116934
   a. Revised the BOPF Arsenic Emission Factor – Of the three stack test runs for the “P003-9 (R Vessel) primary oxygen blow; P003-7 (F Vessel) primary oxygen blow” (Primary Oxygen Furnace), one run resulted in a lb/ton emission factor 350 times the other two runs in the test. This run skewed the average calculated lb/ton emission factor, resulting in a value 100 times higher than the next highest facility. As this value is an extreme outlier, we revised the calculation, using the next highest single test value from all facility primary oxygen furnace tests (1.63E-06 lb/ton of arsenic) in place of the three run average (1.49E-04 lb/ton of Arsenic).
   b. Revised the BOPF secondary baghouse arsenic, chromium (VI) and nickel allowable emission rates, for which EPA has applied allowable HAP emission rates 75.25 times higher than the actual emission rates. The scale-up from actual to allowable emissions should be based on production rate similar to the Taconite RTR, where EPA is scaling the emissions levels from the year analyzed (2014) to the maximum production levels by process group. The ratio of the maximum production rate (3,467,500 tpy) to the actual production rate (2,701,327 tpy) is 1.28 and can be used to calculate a more realistic allowable emission rate. Using the 1.28 allowable ratio in lieu of EPA’s flawed methodology demonstrates that EPA overestimated allowable emissions by 75.25 divided by 1.28 or a multiplier factor of 58.8. EPA’s allowable emissions should be reduced by dividing by 58.8. The allowable emissions for the three primary risk drivers (arsenic, chromium (VI) and nickel) were remodeled to determine a more appropriate inhalation risk for allowable emissions.
   c. No stack parameters or locations were modified.

   In sum, the above adjustments are consistent with appropriate and conservative modeling assumptions, and for the reasons detailed in the sections above, they better reflect actual emissions and risk from the source category. EPA should therefore include these adjustments when performing the new risk modeling for the final rule. Making these adjustments has significant impact on risk, as demonstrated in Tables 1 and 2 above, reducing it to very low levels with actual MIR cancer risk below 1-in-a million and an MIR based on allowable emissions in the single digits. Additionally, EPA should correct the emissions to the PM$_{10}$ inhalable fraction and employ the more appropriate control efficiencies: 90% for blast furnace casthouse fume suppression systems and 71.8% building capture efficiencies for largely enclosed BOPF shops, which were not included in the AISI/USS risk modeling in order to illustrate how low the source category residual

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63 AISI previously raised the concern of this flawed methodology in comments to EPA submitted on March 13, 2015. See Letter from Peter Pagano, Vice President, Env’t, AISI to Donna Lee Jones, Ph.D., Senior Technical Advisor, EPA, Comments on EPA December 12, 2014 Integrated Iron and Steel Risk and Technology Review Modeling Data File, at 5 (Mar. 13, 2015), EPA-HQ-OAR-2002-0083-0711; see also Email from Donna Lee Jones, EPA to Colin Carroll & Paul Balserak, AISI attaching EPA’s comments to AISI’s March 13, 2015 Comments on EPA December 12, 2014 Integrated Iron and Steel Risk and Technology Review Modeling Data File, at Attach. 2 (Nov. 15, 2016), EPA-HQ-OAR-2002-0083-0751.

64 Facility No. 42003110001116934’s maximum steel production rate is 3,467,500 tons per year, based on its Title V operating permit, not 3,832,500 tons per year as EPA’s record suggests.
risk is reduced simply by using appropriate emissions data inputs, avoiding scientifically unfounded scale-up approaches, and modeling the correct inhalable fraction of HAP emissions. Including these additional important changes would reduce the actual and allowable blast furnace and BOPF shop risk estimates even further.

III. EPA Appropriately Concludes The Existing MACT Is Protective And Properly Decides Not To Impose AMOS-Based Requirements.

In the AMOS analysis, EPA evaluates the remaining risk level after the implementation of the existing standards and the availability of cost-effective controls to further reduce emissions and associated risk. The Proposed Rule evaluates both add-on control technologies and work practice standards, and ultimately, it concludes that no additional requirements are appropriate, given the high costs of additional controls and significant uncertainties regarding benefits and effectiveness of any work practice standards. These proposed conclusions support a decision to finalize its determination not to revise the Subpart FFFF standards pursuant to Clean Air Act Section 112(f). As Section 112(f)(2) requires:

[T]he Administrator shall, within 8 years after promulgation of standards for each category or subcategory of sources pursuant to subsection (d), promulgate standards for such category or subcategory if promulgation of such standards is required in order to provide an ample margin of safety to protect public health in accordance with this section . . . or to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.65

The conservative residual risk estimates in the proposal are already well below the presumptively acceptable risk threshold, despite being artificially inflated due to inaccurate emissions inputs and modeling parameters, as discussed above. Once re-calculated to reflect accurate emissions data and appropriate parameters, the residual risk from facilities in the II&S source category will be even lower, to below one-in-a million for cancer MIR based on actual emissions and in the single digits in a million based on allowable emissions. Thus, the Agency’s proposed determination that no additional regulatory requirements are necessary to provide an AMOS or to prevent adverse environmental effect in light of relevant factors including safety and costs is unquestionably reasonable and appropriate.

EPA’s determinations that the add-on control technologies for the blast furnace casthouses, BOPF shop, and sinter plant windboxes would not be cost effective and that the various work practices for UFIP sources lack certainty as to their costs, feasibility, and emissions reductions are appropriate, despite the vastly underestimated costs and overestimated emissions reductions in the proposal. Neither are necessary to provide an ample margin of safety, which already exists, and thus they should not be adopted.

A. The proposal correctly finds that the add-on control technologies evaluated are not cost-effective.

The proposed AMOS analysis considers whether additional control technologies, including wet electrostatic precipitators (“ESPs”) for blast furnace casthouses and BOPF shops and activated carbon injection (“ACI”) systems for sinter plant windboxes, would provide cost-effective emissions reductions. EPA is right to conclude that they would not, given the extremely high costs associated with small incremental additional reductions of HAP. Specifically, EPA evaluated the possibility of requiring wet ESPs as an add-on control technology for blast furnace casthouses and BOPF shop primary units to provide further reductions in chromium (VI) and arsenic emissions, respectively. For blast furnace casthouses, EPA proposes to find that wet ESPs would cost companies more than $476 million with $62 million in annual costs to reduce only an estimated 0.00329 tons per year of chromium (VI) emissions, resulting in a cost effectiveness of $1.9 trillion/ton of emission reductions. For BOPF shops, EPA calculated $793 million in capital costs and $103 million in annual costs to remove 2.25 tons per year of arsenic emissions, costing $46 million per ton. Finally, for sinter plants EPA found that requiring ACI systems would cost the industry $781,286 and impose annual costs of nearly $2 million to remove 0.00197 pounds per year of dioxins/furans emissions, or $188 trillion per ton and $94 billion per pound. Thus, EPA rejected these additional control technologies.

AISI/USS believe that EPA’s very high cost estimates are actually low and that the removal rate estimates are high. The values that EPA calculated are so clearly not cost-effective, however, that further analysis of these costs and reduction levels is unnecessary to reject them under an AMOS analysis. EPA’s proposed determination is thus well within the substantial discretion afforded to it under the D.C. Circuit’s Vinyl Chloride decision and should be finalized.

B. Because the work practice options for UFIP sources, on which EPA solicits comment, would be burdensome, infeasible, and cost-prohibitive, and would not meaningfully reduce risk, they should not be adopted in the final rule.

EPA also considered additional control options to reduce UFIP emissions. As discussed above, EPA created this “UFIP” designation to refer to intermittent fugitive emissions that facilities generally operate to prevent occurring in the first instance. In other words, facilities are already naturally incentivized to prevent many UFIP emissions as they reflect non-optimal operation. Thus, facilities operate to minimize them without additional regulatory requirements; imposing a regulatory overlay would be problematic from an operational perspective and would not lead to reduced emissions.

First, it would dictate how sources operate – effectively freezing approaches in time when they should be evolving as part of the continuous improvement process. Second, it would impose

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67 Id.
68 Id. We note that the preamble incorrectly states the cost effectiveness for sinter plant dioxin/furan emissions reductions at $94 million/lb; it is $94 billion/lb of emissions removed.
69 NRDC v. EPA, 824 F.2d at 1158.
a one-size-fits-all approach for sources that may make products in different ways and have different configurations. Third, it would create a micro-managerial structure that would be costly—even if not from a capital investment perspective—because of the operational nature of many of the approaches EPA considered. This micro-managerial structure will lead to paperwork deviations, by imposing onerous recordkeeping requirements, which will mean that operators’ and inspectors’ attention will be taken away from critical aspects of plant operations, even when a plant is not causing increased emissions. Thus, they provide no risk reduction benefit despite the cost and effort they entail. Finally, given the intense competition in this industry, which stretches well beyond U.S. borders, these requirements would put U.S. facilities at a cost disadvantage—and would do so without generating commensurate emissions and risk reductions. This is particularly so given the already low source category risk, which will be even lower than proposed when EPA corrects the data inputs to the risk model, including those for UFIP emissions.

EPA solicits comment on new work practice requirements for UFIP emissions from: (1) blast furnace casthouse fugitive emissions, (2) BOPF shop fugitive emissions, (3) slag handling and storage operations, (4) blast furnace bell leaks, (5) blast furnace planned openings, (6) blast furnace unplanned openings, and (7) beaching of iron. The proposal suggests a variety of options for these sources, which EPA broadly broke into two “options,” one focused on work practices for blast furnace casthouse and BOPF shop fugitive emissions and the second for all seven UFIP emission sources. EPA appropriately acknowledges that there are significant uncertainties in costs, effectiveness, and feasibility of the work practice options on which it seeks comment. AISI/USS believe that the estimates in the proposal drastically understate the costs and likewise overstate any emission reductions that would be achieved, since, as stated above, companies already work to prevent these emissions and are incentivized to do so to maintain their operations in the most efficient and safe manner. Although EPA estimates the specific costs for each of the work practices discussed in the proposal preamble, it fails to attribute potential HAP emissions reductions individually, and thus does not appropriately estimate cost-effectiveness. Even without these additional considerations, EPA is right not to require them, but with an accurate view of the costs and benefits of this regulatory overlay, the decision is unquestionably correct.

Given the risk modeling, the work practice options discussed are not necessary to provide an ample margin of safety. The various compliance and enforcement documents related to these so-called UFIP sources that EPA added to the rulemaking docket subsequent to the close of the initial comment period are not to the contrary, as discussed in greater detail below. Moreover, it

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71 84 Fed. Reg. at 42,728.
72 The potential work practices discussed in the proposal are too vague and uncertain to give the public, including the regulated facilities subject to the Subpart FFFFF standards, sufficient notice of any potential regulatory requirement and be reasonably able to provide comment on such standards. Therefore, finalizing any of the work practices discussed in the proposal preamble in the final rule would violate EPA’s obligation to satisfy the Administrative Procedure Act. 5 U.S.C. § 553(c). If EPA determines that work practice standards for UFIP sources are eventually necessary, it must re-propose them including specific regulatory language to enable interested persons to evaluate and comment. There may be instances in which EPA could go immediately final from a preamble statement, because of the complexities of the sources at issue and the extreme uncertainty in how the potential work practices would operate, this is not one of those cases.
would be unreasonable to require the potential work practices as doing so would, in many cases, codify practices that already occur voluntarily or pursuant to federal or state requirements and drive up costs of compliance without resulting in any risk reduction. Adding a substantial administrative burden to an important economic sector, particularly without clear benefit, is contrary to Congress’ purpose under the Act (which include considerations of promoting the productive capacity of the population) and with reasoned decision-making. The focus should be on maximizing environmentally beneficial results; not paperwork. Codifying work practices that already take place on a case-by-case basis (that are unique to the facility as well as the operations and other conditions at the time) would result in a misdirection of resources not only from the steel industry to comply with added monitoring, recordkeeping, and reporting requirements, but also from EPA related to assuring compliance with details that ultimately have little bearing on air quality and public health.

Finally, as detailed below, many of the work practices are practically infeasible as applied to particular plants or generally, not cost effective and, in some instances, could even be contrary to practices established to assure facility safety. EPA should thus finalize its proposal not to amend Subpart FFFFF to require additional work practices for UFIP sources.

1. The costs of the first approach on which EPA solicits comment – requiring operating plans, increased monitoring, and other work practices for BF casthouse and BOPF shop fugitives – would be excessively high, the practices not workable, and the reduction in risk not meaningful given the already very low risk.

   a. Blast furnace casthouse fugitive potential work practices are not appropriate to adopt under the AMOS analysis.

   The potential work practices described for blast furnace casthouse fugitives are unnecessary to address the very low risk of 0.3-in-a-million from this source and, in any case, would be unworkable; in some cases, they would be impossible to implement. For example, EPA solicits comment on a requirement to keep doors and all other openings closed at all times. Such a requirement does not consider the temperature conditions in the casthouse and the need for airflow for workers. The proposed requirement fails to consider that building openings along with the roof monitor were intentionally designed for natural ventilation of the work area to manage any potential carbon monoxide levels and minimize temperature impacts to employees. While the natural ventilation of casthouses ranges considerably, it is typically in the range of a million cubic

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74 Email from Paul Balserak, AISI, to Chuck French, EPA OAQPS & Donna Lee Jones (May 14, 2019), EPA-HQ-OAR-2002-0083-0899.

75 84 Fed. Reg. at 42,726.
feet per minute (“CFM”); as openings are closed and ventilation is limited, facilities will need to find ways to introduce a significant volume of fresh air into the building.

Closing all openings would dramatically alter air flow in the building and likely require additional, significant-in-size HVAC equipment to ensure a safe work area, a cost that would need to be accounted for in any proposal the agency later offers. As a practical operational matter, it would also interfere with the movement of materials for operating the plant, including large mobile mechanical equipment that needs to be able to safely enter and exit the casthouse doors. Finally, sealing the building and requiring inspections in hard-to-access areas can create additional hazards. For instance, some casthouse openings may be hundreds of feet off the ground, requiring significant precautions due to the height alone, which means that maintenance and inspections of the additional enclosures must be carefully planned. Sealing the building would create a concern due to the heat inside these areas. Hot iron coming out of the blast furnace can be approximately 2700°F Fahrenheit. It would not be surprising to see the ambient temperature of the building, particularly if the openings are closed, in excess of 120°F Fahrenheit.

Similarly, limiting the time that runner covers may be “off” is inappropriate because, in certain instances, runner covers must be off to prevent an overflow of slag. EPA’s selection of two hours for covers to be off is not reasonable or practical, is not grounded in operational experience, and fails to reflect that there may be times when runner covers must be off for longer periods, especially when a facility is coming back online after an outage, as the company seeks to monitor the flow of slag and iron. EPA underestimates the time both sets of covers may need to be removed as the needs, as noted in the example above, are determined on a case-by-case basis. In addition, the configuration of the casthouse dictates the feasibility to accommodate runner covers, and in some instances, runner covers could interfere with clearances for equipment mobility. In such cases, requiring runner covers would necessitate equipment modifications if there is already limited space; that is, even if the space could be modified to accommodate runner covers. This would all be done at great expense with no appreciable reduction in risk.

Further, the work practices considered for blast furnace casthouse fugitives would not effectively reduce risk, in part, because EPA uses an inaccurate, too-low control efficiency for the existing fume/flame suppression systems at the casthouses, thus overestimating the existing risk to be reduced. EPA incorrectly assumes a 75% capture efficiency for casthouse suppression systems, despite the 90% control value that EPA has used in the past. The potential risk reductions are also undermined by the flawed emissions inputs and modeling approaches used to estimate residual risk, described above. Additionally, requiring more monitoring of openings will not provide any additional level of emission control. Minimal (if any) additional risk reductions would result from the potential work practices because blast furnace operations already minimize emissions to comply with the current II&S MACT 20% opacity standard. Moreover, the proposal misunderstands the current opacity readings performed at the casthouses. Specifically, EPA states that facilities read only individual openings in the casthouse, when, in fact, Method 9 readers read the entire building and record the highest observed opacity for each reading.76 This means that the costs of EPA’s proposal would be much higher if individual opening readings were required.

76 Ample Margin of Safety Analysis at 12, EPA-HQ-OAR-2002-0083-0953.
Further, there may be safety concerns (and costs to address those safety concerns) with reading all openings (e.g., constructing ladders to reach an appropriate observation point, dealing with conducting readings when there is ice on a ladder or roof) that are not addressed in the discussion of these options. Such issues would need to be addressed in more detail in any proposed rule in order for EPA to provide the regulated entities with a meaningful opportunity to comment before issuing a regulation. The complexity of these operations is such that regulatory language must be carefully crafted to address operational concerns while also meeting regulatory goals. Based on all of these factors, EPA’s estimate that the work practices would achieve between a 50% and 90% reduction in fugitive emissions between the casthouse and BOPF shop fugitives is grossly unrealistic and the proposal provides no sound technical justification for that assumption.

Thus, the contemplated work practices would not be cost-effective to implement, particularly given the low risk reduction to be achieved. The costs to undertake some of the physical changes that could be required under the potential work practices are significant. While the cost to physically seal the building would be high on its own (approximately $1 to $3 million), added costs to address ventilation and temperature concerns would be staggering. For example, the cost to replace fresh air flow and provide necessary ventilation for a casthouse if it needed to seal openings would require expenditures to install a baghouse and adjust the total flow, ductwork, power needs, fans, connections, layout, and an outlet for the ventilation. A baghouse costs more than $20 million, and fans that can circulate 500,000 CFM cost in excess of $750,000. Even preparation of a new operating plan would be costly, requiring each plant to hire consultants to conduct in-depth reviews of all current plans, each casthouse building structure, functions within the casthouse, and specific operations inside the casthouse. This undertaking would require massive effort and significant cost. Moreover, the additional monitoring and recordkeeping requirements would require a vast increase in work hours and expense in order for facilities to be able to certify continuous compliance with the work practices, yet provide little to no environmental benefit.

b. **BOPF shop fugitive potential work practices should not be adopted.**

The potential work practices for the BOPF shop fugitives would be practically infeasible and otherwise problematic to implement. There is also significant uncertainty due to the descriptions in the proposal being simply too vague to properly evaluate what the work practice would actually entail. Indeed, the descriptions in the proposal include phrases like “minimize emissions” and “detect openings and leaks.” As EPA has acknowledged in other rulemakings (e.g., leak detection and repair requirements for various chemical and oil and gas operations), the

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77 See 42 U.S.C. § 7607(d).
79 While it is true that all plants have standard operating procedures, making such procedures into regulatory requirements is a transformative step, such that each procedure would need to be reviewed in light of the fact that it would be a requirement to which the facility must certify annually and report deviations semi-annually. Thus, companies incur significant cost even by making enforceable those actions that they are already undertaking (even if that were what was being proposed here).
80 84 Fed. Reg. at 42,726.
regulatory construct around “detecting leaks” involves significant detail and determinations about level of precision.\textsuperscript{81} Companies need the opportunity to review and comment on the standard of “detection” to which they will be held and simply what constitutes a “leak.” Another example is the term “optimize” which is included in the potential work practice descriptions.\textsuperscript{82} “Optimizing” hot metal ladle positions and furnace tilt angles is typically performed during shop design, rather than after the fact. Thus, it is unclear what an operating plant would exactly “optimize” and how EPA would determine that it had or, perhaps more importantly had not, optimized. Lastly, the instruction to “minimize hot iron pour/charge rate (minutes)”\textsuperscript{83} is vague and unclear. These types of provisions have the pernicious effect of inserting an environmental regulator into the actual operation of complex technological facilities with which they have no ability to judge the appropriate balancing of factors, including safety, environmental effects, product quality, efficiency of operations, and the like, that go into the design and operation of these plants.

Additionally, as noted above in the blast furnace casthouse work practice discussion, undertaking simultaneous Method 9 readings from all openings is impractical, given Method 9’s constraints on sun position, wind direction, and not reading through the long axis of the plume. The use of higher draft velocities to increase the capture of fugitives is also flawed, and may not even be possible. Adjusting draft velocity is not a simple adjustment and must be evaluated within the context of the overall system design. In many circumstances, it may not even be possible. The only way to achieve increased draft velocities at existing hoods is if the system is not being operated at its full design capacity, and thus has existing unused potential that can be utilized. Maintaining higher draft velocities could also interfere with facilities’ operations because equipment and associated controls should be run as designed. For example, an ESP requires a certain amount retention time to collect emissions and has ranges of velocities where it is designed to be most effective. Simply increasing the draft to an ESP will, in turn, increase the emissions out of the stack. Collection systems for ESPs, or baghouses or scrubbers, require a fast enough flow to avoid entrainment or premature dropout, but not so fast that it causes uneven distribution, erosion, or simply lowering pressure without actually increasing flow through the system. Increasing draft velocities would also undermine the design of certain suppressed-combustion BOPF hoods designed to be slightly positive at the mouth of the furnace for emissions capture reasons. Increasing draft also increases ingress air at the furnace/skirt opening, which increases combustion of process gases (carbon monoxide (“CO”) and a little hydrogen (“H\textsubscript{2}”)) and, in turn, adds to the heat load and associated stresses on the hoods. Added stresses on the hood could lead to more leaks, downtime for repairs, and a reduced hood life. Higher draft velocities also impact controls in adverse ways, reducing overall baghouse effectiveness, increasing failure rates and the potential for spark holes (absent a spark arrestor) for baghouses, and requiring increased water flow for proper cleaning for scrubbers. For shops that used water-cooled hoods, this could lead to unreasonable risks of water leaks, which present great safety concerns and hazards because of the potential for water to mix with molten metal in the BOPF shop. The increased draft also puts stress on the gas cleaning efficiency and increases wear in the ductwork and other equipment.

\textsuperscript{81} Id.
\textsuperscript{82} Id.
\textsuperscript{83} Id.
The requirement to “close all shop openings” would also pose challenges for facilities, and likely is not possible while operating a facility. As noted above under blast furnace casthouse openings, there are building design considerations for proper ventilation and worker safety concerns that must be addressed. This includes natural ventilation and local ventilating fans present throughout the building. As a result, closing openings would require facilities to provide for increased ventilation and ingress of fresh air into the BOPF shop through another means, likely at great cost, similar to the estimates for blast furnace casthouses above. In addition, the openings in the BOPF shop are constantly being used by large mobile equipment, including locomotives hauling full and empty iron railcars and slag haulers. EPA’s work practice would require that all of these activities be constantly documented, which is an excessive burden. Furthermore, closing the shop entirely would be present problems in wet scrap events because it could prevent the use of blow out panels purposefully installed at sources for when wet scrap events cause a pressure surge in the building, which would otherwise badly damage the building’s siding. Finally, the design of some facilities would prevent enclosure. For example, one facility could not physically install a hood to properly service and maintain equipment due to the position of its cranes. The only potential place with adequate space would prevent crane operators to see in order to pour, and moving the crane operators lower would place them under the skimmer tilter, creating a serious danger for their safety. EPA has not been able to address any of these factors in the proposal, such that it is not in a position to finalize any work practices in this regard (i.e., requiring additional public comment opportunity on any such analysis).

The proposal assumes a 65% reduction in emissions from the work practices on which it solicits comment, but these reductions will not in fact occur. Because of the minimal amount of fugitive emissions generated from BOPF shop process, even completely eliminating these would not yield the significant emissions reductions the proposal predicts. EPA is only able to credit emissions reductions by assuming much higher emissions occur than is born out in practice. Indeed, EPA’s existing emissions estimates are flawed because BOPF shop operations are largely enclosed already (i.e., an approximate 90% enclosure), yet the proposed emissions and risk calculations fail to account for any building capture for emissions that are not captured by the primary or secondary emissions controls. “Fully enclosing” the building would produce only minimal additional emission reductions. BOPF shops also have already installed controlled equipment, including baghouses, scrubbers, and electrostatic precipitators with unique design features of hood and ductwork that allow ongoing compliance with the 20% three-minute average opacity limit and control equipment particulate limit in the existing II&S MACT standards. Some sources in the category also limit certain operations (i.e., imposing a slower pour rate) which also limit emissions, and all BOPF shops adjust their pour rates to comply with the existing opacity standard as needed.

Additionally, facilities already typically operate their systems at their design capacity to maximize capture of emissions. Increasing draft velocities as suggested in the proposal for BOPF shop controls would only be possible under current design if a facility was not already operating to its system’s design capacity. Otherwise, substantial system redesign and significant investment would be required, but EPA has not suggested this and has certainly not taken any costs into account for such activities. The work practices have the potential, in some facilities, to actually limit total canopy/secondary vent roof scavenging systems from collection of emissions, which would be counterproductive. This is especially true where portions of the roof monitors have
already been sealed to aid in fume collection, which would require exemption of wall ventilation louvers from this type of requirement. Instead of assuming, without any actual data, that the work practices will theoretically reduce emissions by 65%, EPA should correct the fugitive emission estimates to include a 71.8% building capture efficiency, at least for the mostly enclosed, well-controlled BOPF shops. This approach has been appropriately applied by EPA in other efforts and is supported by EPA’s AP-42 emission factors, as described above, related to the residual risk calculations, and also by the clear evidence of reduced ambient PM$_{2.5}$ emissions in the vicinity of integrated iron and steel facilities in recent years.\(^{84}\)

Additionally, even if it were practical and operationally reasonable to implement the potential work practices, which it is not, to the degree that we can assess their costs, it is clear that they would not be cost-effective. For one thing, the proposed cost estimates fail to include costs for access to the openings above 12 feet high. Access to these areas requires cranes or scaffolding, and those costs would need to be added to EPA’s estimate. One facility that was required to perform monthly inspections and repairs on the BOPF shop building at one time spent as much as $645,000 in a year to do so, which illustrates the unrealistically low nature of EPA’s cost estimates. Further, many costs are directly tied to the size of the unit, which is contrary to EPA’s assumption that costs are independent from unit size. Additionally, to the extent that the work practices would require modeling of the facility, in addition to the detailed engineering analyses that would be necessary, EPA’s cost estimates fail to factor in those costs, which cost an AISI member approximately $200,000 for a single facility in the past (and would be more expensive today).

c. Method Alt-082 should be removed as an opacity measurement method because of issues with the functionality, availability, and application to II&S sources of the camera systems. If EPA nonetheless retains Method Alt-082, it is critical to also maintain the Method 9 option as well.

EPA includes the use of EPA Method Alt-082 (camera) (“Alt-082”) (referencing ASTM D7520-16) to measure opacity from the blast furnace casthouse and the BOPF shop, as an alternative to Method 9.\(^{85}\) Method 9 is reliable and has been used in the steel industry for decades. Method Alt-082, on the other hand, should not be included in this rulemaking, even as an option. EPA’s statements in the Ample Margin of Safety Analysis for Nonpoint Sources in the II&S Industry technical memorandum that the cameras required in Method Alt-082 are more reliable, less biased, and an improvement over Method 9 are incorrect and unsupported in the record.\(^{86}\) Even if EPA believes the cameras are generally reliable (which they are not), it is clear that they

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\(^{84}\) PM$_{2.5}$ ambient air data compiled by EPA has documented that PM$_{2.5}$ concentrations from monitors located near Integrated Iron and Steel facilities have been reduced 37% based on the most current 2016-2018 published design data compared to the 2005-2007 levels. These most current PM$_{2.5}$ concentrations average 10.5 µg/m$^3$. EPA, Air Trends, Air Quality Design Values, [https://www.epa.gov/air-trends/air-quality-design-values#report](https://www.epa.gov/air-trends/air-quality-design-values#report).

\(^{85}\) 84 Fed. Reg. at 42,726.

\(^{86}\) Mem. from Donna Lee Jones, OAQPS, EPA; Brian Dickens & Patrick Miller, EPA Region V to II&S RTR Project File, Ample Margin of Safety Analysis for Nonpoint Sources in the II&S Industry at 12 (May 1, 2019), EPA-HQ-OAR-2002-0083-0953 (“Ample Margin of Safety Analysis”).
are not established as reliable for roof monitors and for that reason alone should not be adopted for this industry at this time.

AISI previously expressed concerns with Method Alt-082 during development of a Ferroalloys Production rule. AISI’s comments there highlighted significant concerns with Method Alt-082.\textsuperscript{87} AISI’s comments included an important technical paper that is omitted from EPA’s docket here, but which did actually examine the use of digital cameras for measurement of fugitive emission opacity that documented statistically significant field results that were inconsistent and greater than those reported by Method 9.\textsuperscript{88} These findings were consistent with similar conclusions by the previous ASTM workgroup chair, in work performed regarding digital cameras having observed elevated opacity readings. AISI’s concerns with Method Alt-082 continue to this day. In particular, Method Alt-082 has not, to AISI’s knowledge, been used successfully to accurately quantify and timely address fugitive opacity emissions.

EPA states in this Docket that the only mandatory use of Method Alt-82 was imposed in the Ferroalloys Production source category.\textsuperscript{89} Not apparent from the record for this proposal, however, is that the Ferroalloys industry is not actually using Method Alt-082, but instead is using Method 9 exclusively. Following a decision on a Petition for Reconsideration, a Second Petition for Reconsideration was submitted to EPA by Eramet Marietta Inc. (“Eramet”) regarding the Ferroalloys Production standards in light of new evidence, which is still pending.\textsuperscript{90} Although EPA has not issued a formal determination on this second reconsideration petition, on June 8, 2017, EPA nonetheless approved use of Method 9 as an Alternative Method to Method Alt-082 for the Ferroalloys Production standard.\textsuperscript{91} As described in the request to use Method 9,\textsuperscript{92} Eramet explained that Method Alt-082 was not reliable or accurate for measuring fugitive emissions from the Ferroalloy Production source category. In that decision, EPA stated that “[t]he sole vendor no longer offers [an ASTM compliant system off the shelf]; “[t]he DCOT software provided by the sole vendor is not yet fully developed for use”; and “[t]he costs of implementing [the method] are unpredictable.”\textsuperscript{93} None of those factors have changed to AISI’s knowledge, and they are equally applicable and relevant to the II&S source category. The current proposal fails to include this relevant information, and it erroneously points to the Ferroalloys Production source category as an

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\textsuperscript{88} AISI Ferroalloys Comments, Attach, Dr. McFarland et al., Fugitive Emissions Opacity Determination Using the Digital Opacity Compliance System (DOCS).
\textsuperscript{91} Letter from Steffan M. Johnson, Leader, Measurement Technology Group, EPA, to Laure Guillot, Eramet Marietta Inc., and Laura K. McAfee, Beverage [sic] & Diamond (June 8, 2017).
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example supporting inclusion of Method Alt-082, when in fact that source category is not using Method Alt-082. Therefore, unless and until Method Alt-082’s accuracy and reliability are demonstrated for fugitive emissions without interference from steam, along with an ability to quickly respond to the results of the Method Alt-082 readings, EPA should not mandate its use.

2. Imposing work practices for all seven UFIP emissions sources would similarly impose unreasonably high costs, require infeasible or unsafe practices, and yield negligible benefit given the already very low risk from the source category.

   a. Slag handling and storage operations should not be subject to work practices.

   The potential work practice for slag handling and storage operations would entail an opacity limit and use of fog spray systems over the slag pit areas.\textsuperscript{94} These work practices are not needed to reduce risk from slag handling because the risk from this source is already very low, at 1.3-in-a-million.\textsuperscript{95} The work practice would also be needlessly redundant, as all facilities in the source category must already comply with applicable state opacity limits. Such limits are federally enforceable by virtue of their incorporation in the facilities’ Title V operating permits and in EPA-approved State Implementation Plans. Facilities already water slag to reduce fugitive emissions, but they control the process to avoid explosions that can occur when hot slag becomes wet. Operating continuous fog spray systems would increase the risk of explosion. This is particularly true during digging activities, which is why water is currently applied at facilities prior to, rather than during, digging. Fog spray systems would pose another safety concern for mobile equipment drivers and others moving through slag areas, particularly during digging activities because the fan that blows the atomized water droplets reduces visibility. Additionally, ice build-up during freezing temperatures (common in the winter months in the locations of facilities in the industry), which can complicate maintenance and create safety concerns. EPA provided no technical justification to demonstrate that the fog spray systems have been implemented and proven effective for the steel industry.

In addition to the technical problems with implementing the fog spray system, the work practice would not ultimately provide an effective risk reduction. EPA’s assumption of a 70% reduction in emissions is without basis. As explained above, facilities already comply with applicable opacity limits. They also already water the slag to cool it off and reduce emissions prior to digging slag from the pit. It would also not be appropriate to codify the existing watering practices because facilities are uniquely configured and require the flexibility to determine the safest and most effective watering practices appropriate to their specific facilities. Moreover, even if EPA codified the current watering practices appropriate for each individual facility, doing so would inhibit further development and innovation of better or more effective practices that may be possible going forward. Adding a new reporting and recordkeeping obligation would have no

\textsuperscript{94} 84 Fed. Reg. at 42,727.
\textsuperscript{95} Email from Paul Balserak, AISI, to Chuck French, EPA OAQPS & Donna Lee Jones (May 14, 2019), EPA-HQ-OAR-2002-0083-0899.
incremental benefit in terms of reduced emissions and would only add cost associated with the increased personnel hours (both by the industry and by EPA) to satisfy them.

The work practices described would not be cost effective as they would impose significant costs associated with installing and maintaining a new spray system at multiple slag pits. Further, EPA’s assumed capital costs for the work practice are significantly underestimated. Even before factoring in maintenance costs, the investment to install a spray system is in excess of $250,000 for a single slag pit, which includes costs for new headers, piping, and spray nozzles. Given these high costs and the minimal additional reduction in emissions, this work practice would not be cost effective.

b. Blast furnace bell leaks should not be subject to work practices.

The work practices on which EPA seeks comment for blast furnace bell leaks would be needlessly redundant, as all facilities in the source category must already comply with applicable state opacity limits from State Implementation Plans and must certify compliance with them under their in their Title V operating permits. Bell leaks also contribute very little risk to the source category—0.06-in-a-million—and thus do not require work practices to further reduce this minimal risk. Further, the bell leak work practices on which EPA seeks comment would not be workable. For one thing, the proposed source description of blast furnace bell leaks creates a concern because there could be other causes of emissions from the top of the furnace. For example, if an uptake is leaking, it is not a bell leak but would still be included in the opacity limit.

The requirement to observe the blast furnace bell top monthly would create a safety concern, as personnel would need to go on top of the furnace to record data from the receiving hopper and determine where the gas is coming from while not charging the furnace. This is a difficult area to reach, and dangerous to remain in while the furnace is operating. The bells also continue to operate for a period of time during the furnace shutdown due to safety reasons, so the area would not be safely accessible even during shutdown. Another issue is that the work practice could mandate repair or replacement of seals that is not necessarily the correct action, when other steps may be available to address the issue. It is inappropriate for EPA to prescribe this outcome, as it needlessly increases costs and wastefulness that could be avoided by allowing facilities to continue operating according to their best management practices. Facilities already replace bell seals when necessary, although the potential work practice would preclude the normal initial step of patching or repairing seals first, rather than immediately replacing them. It would also not be possible to replace bell seals within the timeframe assumed in the proposal. A conservative estimate would require a one- to six-day outage to replace a small bell, and a 16-day outage with a full blowdown to replace a large bell. Some furnaces, likewise, are not designed with additional skirt seals around bells, so they do not have a seal to change at the frequency contemplated in the

97 Email from Paul Balserak, AISI, to Chuck French, EPA OAQPS & Donna Lee Jones (May 14, 2019), EPA-HQ-OAR-2002-0083-0899.
potential work practice. Additionally, the proposed modification to the standard Method 9 procedures in the work practice description is unjustified and inappropriate.

Imposing the potential work practices is unlikely to result in significant emissions reductions and will not come close to the 70% emissions reduction EPA assumes. Even if 70% reduction was achievable, EPA calculates only a PM$_{2.5}$ reduction of three tons per year at the worst case facility.~\textsuperscript{98} Bell leaks are infrequent already, and they are not a large source of emissions, particularly because not all blast furnaces have tops with bells, and even some facilities with bell-top blast furnaces are designed to direct emissions from those sources through off-gassing systems rather than vent them to the atmosphere. It is thus particularly inappropriate and unnecessary to require bell seal replacement for either of these types of systems. The industry already strives to reduce bell leaks, as they result in inefficient operations, costing facilities time and money. Moreover, the proposal’s emissions assumptions for bell leaks are inaccurate and overinflated due to the reliance on the flawed emissions data and improper HAP to PM scale-up ratio discussed above. Finally, the photograph included in the proposal supporting materials purporting to show high visible emissions from a bell leak is inaccurate and misleading.~\textsuperscript{99} This photo was taken at a facility where there was a manufacturers’ defect in the seal, which is atypical and not reflective of normal or frequent occurrences. The manufacturer was held responsible for the seal replacement, which has since been replaced.

The work practices would also not be cost-effective. For instance, the cost of replacing a small bell seal is estimated by EPA at $50,000, and a large bell seal repair at $200,000.~\textsuperscript{100} Based on the industry’s knowledge of repair and replacement costs, a more accurate estimate of the cost to replace a small bell lower half seal is approximately $500,000. Facilities already replace seals as necessary during outages. The early, additional bell seal replacement that would be required by the work practices would impose significant costs associated with additional outages, which can take up to 16 days (plus additional lost production days), compared to the outages currently taken to replace the seals. The work practice assumptions also do not account for the significant burden and cost to keep records for each seal replacement and would significantly reduce the overall cost-effectiveness of the work practice.

c. Blast furnace planned openings should not be subject to work practices.

The work practices for planned bleeder openings~\textsuperscript{101} would be needlessly redundant, as all facilities in the source category must already comply with applicable state opacity limits as discussed above for other sources. Work practices are not needed to reduce risk for planned

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~\textsuperscript{99} Ample Margin of Safety Analysis at A-2, EPA-HQ-OAR-2002-0083-0953.

~\textsuperscript{100} Cost Estimates Technical Review Memorandum at 5, EPA-HQ-OAR-2002-0083-0954.

~\textsuperscript{101} 84 Fed. Reg. at 42,727.
bleeder openings because the risk of 0.03-in-a-million from this source is already very low. Further, the work practices outlined for planned openings are not technically feasible for all facilities, as they were tailored to individual facilities, and a one-size-fits-all approach does not work due to variations in design of blast furnaces across the industry. Attempting to impose these work practices across the board could result in safety issues.

The assumed emissions reductions of 70% associated with the planned opening work practices are vastly overstated. Even if 70% reduction were achievable, EPA calculates only a PM$_{2.5}$ reduction of two tons per year. For one thing, when the furnace is emptied to the extent that would be required (i.e., “tap as much liquid (iron and slag) out of the furnace as possible”), a lot of slag becomes mixed with the iron. This slag, and the iron it has been mixed with, must then be beached. Therefore, complying with this suggested work practice would result in approximately 100 tons of otherwise usable iron being beached each time, which not only imposes a significant cost on facilities but also would cause additional emissions associated with beaching (which it appears is not accounted for in the evaluation), not to mention being inconsistent with the other suggested work practices geared toward minimizing beaching of iron.

In addition, all of the measures discussed are already performed regularly as part of the shutting down of the blast furnace. EPA’s estimate of planned openings occurring 15 hours per week, based on a twice-per-week frequency, appears to be unrealistically high, however. The proposal’s emissions assumptions for planned bleeder openings are also inaccurate and overinflated due to the reliance on the flawed emissions data and improper HAP to PM scale-up ratio discussed above. And, the calculated emissions are over-inflated and not representative of fugitive emissions in the source category because they are based on a blast furnace that is significantly larger and runs at much higher pressures than many of the furnaces currently in operation. Smaller furnaces typically run at half the gas flow of larger furnaces that EPA used in its calculation. While we do not agree with EPA’s methodology, using EPA’s formula, emissions from those smaller units would be around 23.6 lbs rather than 41 lbs.

The planned opening work practices would not be cost-effective, as they would yield little if any emissions reductions and would impose costs associated with the Method 9 readings. Finally, requiring development and operation according to a Gas Bleeder Valve Opening Plan necessarily carries the costs of developing the plan, as well as the resources to monitor and supervise compliance and generate and maintain associated records.

102 Email from Paul Balserak, AISI, to Chuck French, EPA OAQPS & Donna Lee Jones (May 14, 2019), EPA-HQ-OAR-2002-0083-0899.
103 Cost Estimates Technical Review Memorandum at Table F-2 (the worst case example facility), EPA-HQ-OAR-2002-0083-0954.
104 This calculation assumes 10% of an operating gas flow of 1700 ft$^3$/sec, the 0.0009 lb/ft$^3$ PM load and 119 seconds.
d. **Blast furnace unplanned openings should not be subject to work practices.**

The suggested work practices for unplanned bleeder openings[^105] would be needlessly redundant, as all facilities in the source category must already comply with applicable state opacity limits as discussed above. Unplanned blast furnace openings also do not require work practices to reduce risk because the risk from this source is already extremely low at 0.02-in-a-million.[^106] The proposal creates confusion and is inaccurate in its nomenclature of “slips” to refer to unplanned openings. This is because slips do not necessarily cause bleeder opening. Indeed, slips can happen with no bleeder valve opening at all. Thus, imposing a limit on “slips” would be overbroad and unrelated to emissions. If EPA were to impose any work practice for these events, which it should not, it should address only slips that trigger unplanned bleeder openings.

In addition to the concerns with nomenclature, work practices should not be adopted for unplanned openings because of the problems with implementing them, including that they are not technically feasible for all sources in the source category and could result in safety issues by inhibiting facilities’ operational flexibility needed to maintain safe and optimal operations. The potential work practices are based on individual facilities and, because of significant variations in blast furnace design, a one-size-fits-all approach is not appropriate. For example, it is unclear how EPA would classify an “unavoidable slip,” as facilities already aim to avoid unplanned bleeder openings because they result in lost production. Bleeder valves are safety mechanisms to ensure that gas does not build up inside the vessel and cause an explosion. If an unplanned bleeder opening occurs, it is for the safety of the personnel and to protect the equipment; imposing constraints could create safety risks unnecessarily. Because blast furnaces are unique, moreover, the circumstances that cause slips will also vary by blast furnace. The use of the term “unavoidable” clearly creates the misimpression that a judgment can be made by a regulator regarding the avoidability of each particular slip (assuming that EPA intends to regulate only those that cause bleeder valve openings). EPA states in the technical memorandum regarding emissions estimates for UFIP sources that, “Blast Furnace Unplanned Openings occur only occasionally, with fewer slips occurring with better quality raw material and more attentive furnace operation to enable early action to avoid slips.”[^107] Actual data on slips provided from multiple sources and detailed in Table 2-1 of that memorandum lists average unplanned openings from 8 sources over varying time periods. As noted above, these data are not meaningful since methods to minimize, and any corresponding number of unplanned openings, are furnace-specific and depend on furnace-specific factors (e.g., furnace size).

The suggested work practices for unplanned bleeder openings are also flawed because, in the event of an unplanned opening, facilities would not be able to take a Method 9 reading. Unplanned openings occur for a short duration (i.e., under one minute), and their occurrence cannot

[^106]: Email from Paul Balserak, AISI, to Chuck French, EPA OAQPS & Donna Lee Jones (May 14, 2019), EPA-HQ-OAR-2002-0083-0899.
[^107]: Mem. from Donna Lee Jones, EPA to II&S RTR Project File, Development of Emissions Estimates for Fugitive or Intermittent HAP Emission Sources for an Example II&S Facility for input to the RTR Risk Assessment, at 3 (May 1, 2019), EPA-HQ-OAR-2002-0083-0956.
be predicted. Therefore, it would not be possible to anticipate an unplanned bleeder opening in order to have a Method 9 reader in position to take a reading and, even if that were possible, the unplanned openings do not occur for a sufficiently long duration to allow a Method 9 observation.

The proposal discussion appears premised on the notion that there are standard steps facilities should be taking to prevent slips and, on that basis, mistakenly estimates that the work practices would reduce emissions, and by 70% at that. Even if 70% reduction were achievable, EPA calculates only a PM$_{2.5}$ reduction of three tons per year.\textsuperscript{108} This contradicts another assertion by the agency that “many of the BFIs in the industry operate with essentially no slips.”\textsuperscript{109} In particular, the potential work practices assume that screening and monitoring of temperature and pressure can avoid slips. But these parameters and raw material movement are already diligently tracked to ensure proper furnace operation, which, in itself, minimizes the risks of unplanned bleeder opening. Because these are currently monitored as a best practice, no appreciable reduction in unplanned bleeder openings can be assumed as the EPA does in its analysis. Further, slip events can be instantaneous and catastrophic, leaving no time for operators to take corrective actions to avoid slips. Operator inattentiveness is rarely, if ever, a cause for slips. By the time the furnace has started hanging, a slip is likely unavoidable. Installing additional monitoring of stockline movement is not a preventative measure but merely an indicator of a problem that has already occurred, and thus will not reduce emissions.

The work practices for unplanned openings would also not be cost effective. EPA’s assumptions for emissions from the unplanned bleeder openings are significantly overestimated because of the agency’s reliance on flawed emissions data and the improper HAP to PM scale-up ratio, discussed above. Thus, there are even fewer existing emissions from unplanned openings to be reduced. Moreover, because the work practices would be infeasible or ineffective, as discussed above, they would not be expected to come anywhere close to the 3.1 tons per year of emissions reductions that EPA projects.\textsuperscript{110} In addition to the nonexistent emissions reductions involved, costs could be exorbitant depending on the existing technology for the particular furnace. If, for instance, a furnace required a reline to install monitoring devices, the cost would be approximately $25 million. This is in addition to the cost to perform a root cause analysis, and the cost to develop and implement a “Slip Avoidance Plan,” which would create additional costs to develop, monitor compliance, and maintain records, all without reducing risk.

Additionally, the emissions calculated are overinflated and based on one Blast Furnace, which is significantly larger and runs at much higher pressures than many of the furnaces in operation. The smaller furnaces run at typically half of the gas flow of larger furnaces, like the Facility No. 39017110000392557 furnace. While we do not agree with EPA’s calculation of emissions from unplanned bleeder openings, even using that flawed methodology to determine PM emissions, an unplanned opening from these smaller units yields a value of 148 pounds, not 206 pounds. This means that using EPA’s methodology the emissions are inflated by almost 30%.

\textsuperscript{108} Cost Estimates Technical Review Memorandum at Table F-2 (the worst case example facility), EPA-HQ-OAR-2002-0083-0954.

\textsuperscript{109} Ample Margin of Safety Analysis at 13, EPA-HQ-OAR-2002-0083-0953.

\textsuperscript{110} 84 Fed. Reg. at 42,727, Table 8.
Beaching of iron should not be subject to work practices.

This work practice would be needlessly redundant, as all facilities in the source category must already comply with applicable state opacity limits, as discussed above. Imposing work practices for iron beaching is also unnecessary because the risk from this source is already extremely low, at only 0.02-in-a-million.\footnote{Email from Paul Balserak, AISI, to Chuck French, EPA OAQPS & Donna Lee Jones (May 14, 2019), EPA-HQ-OAR-2002-0083-0899} Moreover, the potential iron beaching work practices would not be practically feasible to implement. Using shielding or installing enclosures would require additional room where there is very limited space. An enclosure would also have to be able to withstand an intense amount of heat during the beaching event. Due to space issues, enclosures would have to be constructed further away from the furnace, and would cause the metal to cool even more, creating the potential for more emissions, and would ultimately likely result in damage to the torpedo cars. Finally, the term “minimize” in the work practice is too vague and does not include objective conditions that commenters can evaluate and inform EPA of the practical implications for compliance.

The assumption reflected in the proposal that the potential beaching work practice would result in a 70% emissions reduction is without basis. Even if a 70% reduction were achievable, EPA calculates only a PM$_{2.5}$ reduction of 0.06 ton per year.\footnote{Cost Estimates Technical Review Memorandum at Table F-2 (the worst case example facility), EPA-HQ-OAR-2002-0083-0954.} To begin with, beaching occurs infrequently and represents a small amount of emissions in the source category. Finally, EPA’s reference to beaching in the \textit{Ample Margin of Safety Analysis for Nonpoint Sources} as “an environmental hazard,”\footnote{\textit{Ample Margin of Safety Analysis} at 5, EPA-HQ-OAR-2002-0083-0953.} is abjectly wrong. Beaching is an event that, although facilities work to avoid given its disruption to operations, is at times necessary to avoid risks to both workers and equipment. The beaching definition in the Proposed Rule is incorrect because it assumes that iron is beached only due to downstream problems, when it may sometimes be necessary due to the characteristics of the iron itself.

The implementation of the work practices suggested in the Proposed Rule are not a “one size fits all.” Facilities would need to be retrofitted or re-designed to effectively and safely meet the intent of the work practices suggested. The cost to implement such work practices for beaching would be substantial and would result in only a slight reduction of emissions at most. The suggested work practices are not cost-effective. For example, one of the methods EPA suggests is used to control emissions from beaching of iron in the docket, but does not list among the potential beaching work practices in the proposal preamble, is granulation.\footnote{\textit{Id.} at 9.} Granulation is a technology that can process liquid metal into granulated pig iron, but granulation units have not been implemented in the United States. Further, granulation technology requires a substantial amount of water to cool the pig iron adequately and allow for the rapid formation of granulated pig iron, which would require an estimated doubling of water intake and usage at II&S facilities. In addition to increased water usage, granulation plants would require additional energy to operate the plants and additional labor to safely operate and maintain the plant. Finally, capital costs to
construct a granulation plant would be very high, on the order of $100 million at a sample facility, with annual labor and operational costs likely in excess of $1 million.

The proposal’s cost estimates are incorrect and leave out important costs, on top of making inappropriate assumptions. For instance, EPA assumes that facilities would use scrap metal to build an enclosure. This assumption ignores that scrap steel is not necessarily structurally sound, such that material costs would be greater than EPA’s estimate; labor costs were entirely absent from the proposal. For temporary controls using an enclosure and carbon dioxide shielding, a more realistic cost estimate would be $150,000. A permanent enclosure and carbon dioxide shielding would cost significantly more, likely exceeding $1 million.

3. Imposing opacity limits on the UFIP sources is inappropriate and unnecessary.

EPA solicits comment on a variety of potential opacity limits for five UFIP sources. To start, the potential work practices outlined for the five UFIP sources with the lowest emissions (bell leaks, planned and unplanned bleeder openings, slag handling and storage, and beaching of iron), which amount to a combined risk of 1.43 in a million, include opacity limits. Under these requirements, opacity would be limited to 10%, with a 3-minute average, for slag handling and planned bleeder openings; 10% as an average of three consecutive observations made 15 seconds to 5 minutes apart for blast furnace bell leaks; and 20% using a 6-minute average continuously measured during the entire event for beaching. EPA also solicits comment on other possible iterations of opacity limits, including imposing 20% opacity limits on these five, low-emissions UFIP sources, or a subset of them, or establishing 20% opacity limits for bell leaks and planned and unplanned bleeder openings, and 10% opacity limits for iron beaching and slag handling. The proposal does not provide any basis for these requirements, however, and they should not be adopted. First, these sources are already subject to SIP opacity limits. Therefore, imposing an additional, and potentially inconsistent, federal standard would yield no appreciable risk reduction and would only serve to add costs of compliance on the industry. These costs would be particularly high where EPA suggests an opacity standard that is inconsistent with an existing applicable opacity limit, potentially requiring facilities to conduct monitoring multiple times. Even absent the SIP standards, however, simply monitoring for opacity does not provide emissions reductions. Facilities already adjust their systems to reduce excess emissions and optimize their operations, making corrections as needed to protect the process, workers, and equipment. Codifying a federal opacity limit would only serve to add administrative burden on facilities, requiring them to expend financial and personnel resources to meet new federal monitoring, recordkeeping, and reporting. Because of the added burdens and lack of associated emissions reductions, the opacity limits discussed in the proposal should not be adopted.

115 Email from Paul Balserak, AISI, to Chuck French, EPA OAQPS & Donna Lee Jones (May 14, 2019), EPA-HQ-OAR-2002-0083-0899.
IV. EPA Properly Determines That No Revisions Are Necessary Pursuant To Clean Air Act Section 112(d)(6).

EPA identified no advancements in control technology, work practices, or processes during the technology review that warrant additional regulatory requirements. The agency evaluated and correctly determined not to adopt several work practice standards for UFIP sources or require installation of additional control technologies at certain sources, neither of which qualify as developments satisfying the criteria for regulatory revision under Section 112(d)(6).

A. EPA properly found no developments in practices, processes, or control technologies that necessitate revision to the Subpart FFFFF standards.

Clean Air Act Section 112(d)(6) requires EPA to review Section 112(d) standards and revise them “as necessary (taking into account developments in practices, processes, and control technologies).” This review, importantly, is not a redo of the cumbersome initial standard-setting process under Section 112(d). By its terms, the statute requires EPA to identify and evaluate developments in practices, processes, and control technologies that have occurred since the original MACT standards were issued in the source category, meaning that they were unavailable or, in the alternative, at least were not able to be evaluated during MACT promulgation. For technologies or processes that were considered when the initial standards were promulgated, EPA evaluates if there have been key improvements that would drive significant emissions reductions or changes to the cost that would make them more cost-effective. If developments have occurred, EPA analyzes their technical feasibility, emission reductions, environmental impacts, energy effects, and costs to determine whether revision of the standards is necessary.

Even had there been developments, revision of the standards is not automatic. Indeed, Congress’s use of the phrase “as necessary” indicates that EPA must make a finding that revision is needed. There are numerous instances in which EPA appropriately considered a number of potential “developments,” including work practices for UFIP sources, baghouses for blast furnaces, and sinter plant process modifications. None of the work practices or add-on control technologies evaluated actually constitute developments under Section 112(d)(6), however as explained below. Even if the technologies and processes considered were...
properly deemed developments, they would not meaningfully reduce risk for an already very low risk source category. Further, they are not cost-effective.

While the proposal reaches the correct conclusion, the cost estimates used to arrive at that conclusion are grossly understated and the expected emission reductions are significantly overstated. Given these realities, EPA’s proposal not to adopt the work practices is all the more appropriate. In issuing the final action, EPA should correct the inaccurate cost and emissions reduction assumptions and finalize its appropriate determination that revising the II&S source category standards is not called for under the Section 112(d)(6) technology review.

B. The work practice standards for UFIP sources on which EPA solicits comment are not technology developments and should not be adopted pursuant to Clean Air Act Section 112(d)(6).

EPA evaluated whether the same work practice standards on which we comment above related to the AMOS analysis may also constitute developments under Section 112(d)(6). EPA does not propose to require the work practices in light of the “significant uncertainties” involved, but nonetheless solicits comment based on these “uncertainties” in the costs and effectiveness of the work practices. EPA should finalize its determination that the work practices are not developments warranting revisions to the standards under Section 112(d)(6) because they are not, in fact, developments and in any case, are not cost-effective. Many of the processes and practices have been in place since before the promulgation of the existing Subpart FFFFF standards. The work practices are also not cost-effective, as they will cost vastly more than EPA calculated and achieve little to no reductions. Thus, the standards should not be revised to require these work practices under the Section 112(d)(6) technology review.

The suggested work practices already existed and/or were in use when the initial Subpart FFFFF regulations were promulgated and thus are not properly considered “developments” to trigger revision of the standards during Section 112(d)(6) review, nor are they cost effective. EPA evaluated whether the variety of potential work practice standards it considered in the AMOS analysis could be appropriately adopted under the Section 112(d)(6) technology review. The work practices discussed in the proposal are not developments in technology, would not be practically feasible to implement, would not provide meaningful emissions reductions, and would not be cost effective. For each of these reasons, which are detailed for each UFIP source in the discussion of the AMOS analysis above, the work practices are not appropriate to revise the Subpart FFFFF standards pursuant to Section 112(d)(6).

Several of the work practices discussed are already commonly performed, although in a manner that aligns with safety needs and operational realities for the specific facilities and operations in question; these site-specific practices have existed since before the promulgation of the existing Subpart FFFFF standards. It would be inappropriate to revise the standards on the basis of practices that are not actually “developments” under the technology review and in a one-size-fits-all manner as discussed above. Additionally, the work practices suffer from serious

120 84 Fed. Reg. at 42,730.
defects of feasibility, as described in the AMOS section above, and would require measures that, if not impossible, would necessitate significant efforts and enormous investment to modify facilities or processes to implement them. For the practices that are already common in the industry, codifying the existing processes as regulatory requirements would add no risk reduction, could potentially dangerously restrict facilities’ ability to operate for minimizing safety concerns and maximizing operational efficiency, and impose inordinate costs to devise, implement, monitor, and keep records in conjunction with the numerous contemplated “plans.”

C. EPA appropriately proposes not to require installation of baghouses at blast furnaces in that they are already controlled by fume/flame suppressants and that the requirement would not be cost-effective.

EPA considered whether to require the installation of baghouses, which are installed at some blast furnaces in the industry, instead of the fume/flame suppression systems in place for blast furnaces at other facilities.\textsuperscript{121} EPA proposes to find that the costs per unit to convert fume/flame suppression systems to baghouses would be $18 million with $2.7 million in annual unit costs, for an industry total of $140 million and $22 million of annual costs and estimated they would reduce emissions by 120 tons of PM.\textsuperscript{122} Based on the estimated cost-effectiveness estimates of $8.2 million/ton of metal HAP removed and $186,000/ton of PM removed, EPA proposes not to require baghouses based on a finding that they would not be cost effective.

While the proposed determination not to require baghouse installation is proper, if the cost and emissions reductions assumptions were corrected, they would even further demonstrate that requiring baghouses is not appropriate under Section 112(d)(6). EPA cost estimates were based on capital costs from facilities in the source category that already have baghouses installed at their blast furnace casthouses. Many of those baghouses were installed a decade or more ago, to comply with the existing Subpart FFFFFF standards. EPA escalated those capital costs to 2017 dollars to reflect a more accurate picture of cost to install baghouses.\textsuperscript{123} Given that this rulemaking will not be finalized until 2020, EPA should scale the cost data to at least 2020, and perhaps later depending on the compliance date of the rule. More accurate cost-effectiveness estimates would be $778,000/ton of PM removed, and $34.6 million/ton of metal HAP removed.

The emissions reductions projected from installing baghouses are also flawed. The proposal assumes a 75% control efficiency for fume/flame suppression systems for blast furnace casthouses. As described above in the discussion of inappropriate assumptions in the proposed risk modeling, this value is inaccurate and significantly lower than the 90% emissions reduction efficiency that EPA has endorsed in the past.\textsuperscript{124} EPA estimates the control efficiency of baghouses at 95% in the proposal.\textsuperscript{125} Applying the more appropriate 90% control efficiency of the existing

\textsuperscript{121} 84 Fed. Reg. at 42,728-29.
\textsuperscript{122} Mem. from Donna Lee Jones, OAQPS, EPA, Brian Dickens & Patrick Miller, EPA Region V to II&S RTR Project File, Technology Review for the Integrated Iron and Steel NESHAP at 13 (May 1, 2019), EPA-HQ-OAR-2002-0083-0964 (“Technology Review Memorandum”).
\textsuperscript{123} Id. at 11, Table 3-2.
\textsuperscript{124} See supra at 17.
\textsuperscript{125} Technology Review Memorandum, at 13, EPA-HQ-OAR-2002-0083-0964.
suppression systems, the baghouses would only yield an additional 5% of relative reductions of HAP and PM emissions, rather than the 20% incorporated in the proposal’s assumptions. Thus, because the added emissions reductions from installing a baghouse are wrong, the proposal’s cost-effectiveness assumptions are underestimated by a factor of four despite already being high.

D. The process modifications to control dioxins/furans from sinter plants described in the proposal based on EPA’s literature review are not appropriate for the source category.

As part of the technology review, EPA also considered a number of process modifications to provide additional reductions of dioxin/furan emissions from sinter plants but appropriately chose not to propose to require them based on inadequate information. EPA reasonably determined not to focus on additional control technologies for sinter plants during the technology review, which are already subject to limits on organic HAP emissions (through either a volatile organic compound (“VOC”) limit or an oil content limit for the sinter feed), based on its finding in the AMOS analysis that the devices would not be cost-effective.126 EPA found that requiring ACI systems for sinter plants would cost the industry $781,286, with annual costs of nearly $2 million to remove 0.00197 pounds per year of dioxins/furans emissions.127 Based on these figures, EPA estimated a cost-effectiveness of $188 trillion per ton of dioxins/furans removed, which is equivalent to $94 billion per pound of dioxin removed. Based on these incredibly high estimated cost-effectiveness numbers, EPA proposes that these additional control technologies would not be cost-effective and proposes not to require them. As explained above for the AMOS analysis, although EPA’s cost estimates appear unrealistically low and the estimated emissions reductions too high, even with those flawed assumptions EPA calculated such staggeringly high cost-effectiveness values that further analysis is unnecessary to establish that these controls are not appropriate to impose pursuant to the technology review.

The process modifications EPA evaluated are not used at any facility in the II&S source category but, rather, were identified during EPA’s literature review from primarily European sources. Sinter plant emissions are already regulated by PM and opacity limits, as well as a VOC limit or limit on sinter feed oil content to regulate organic HAP emissions, including dioxins. EPA nonetheless looked to identify the potential process changes in its literature review to yield further dioxin emission reductions. None of the process changes that EPA identified warrant revision of the Subpart FFFFFF standards for sinter plants. The industry reviewed the materials from EPA’s literature review described in the proposal, however, they did not provide adequate information to allow us to properly evaluate the potential effectiveness, costs, or other issues associated with the process changes discussed therein. Because there has not been a meaningful opportunity to review and comment on any potential requirement EPA could impose on the basis of that insufficiently clear literature, none should be adopted in the final rule.

126 Technology Review Memorandum, at 17 n.3, EPA-HQ-OAR-2002-0083-0964 (estimating cost-effectiveness of ACI systems to control dioxin emissions at $188 trillion per ton of dioxin/furans removed).
V. **EPA Should Not Issue The Proposed Mercury Standard But If It Does Proceed, Numerous Corrections Need To Be Made.**

In 2003, EPA acknowledged in promulgating the original Subpart FFFFF standards that emissions of mercury from sources in the II&S source category were very low.\(^{128}\) Accordingly, EPA found it unnecessary to establish a mercury standard at that time. Since then, mercury emissions from the industry have continuously declined from these already-low levels, as a result of the concerted effort across industries to eliminate mercury switches from pre-existing automotive scrap metals.\(^ {129}\) They continue to decline as a result of these efforts. This means that establishing a mercury emission standard for the II&S source category is even more unnecessary now than it was in 2003.

The proposed mercury standard should not be finalized at this time for several reasons: first are the problems with the dataset used to establish it; second is the lack of time to correct those flaws between now and the court-ordered deadline for issuing a final residual risk and technology review; and third is the fact that EPA is not obligated to fill perceived “gaps” during the RTR process.

If EPA nonetheless proceeds to issue a mercury standard now, it needs to be revised to account for variability in steelmaking inputs, including for scrap mercury content variability in applying a UPL analysis to the top 5 performing sources and evaluating to be based on analysis of the scrap percentage in the charge during the stack testing (see Barr Engineering Co., *Integrated Iron & Steel Manufacturing RTR: Mercury MACT Floor Analysis* (Attachment D)). For any such standard, EPA should also finalize the proposed reliance on the NVMSRP and equivalent programs but needs to reduce the proposed recordkeeping and verification obligations on the source, given the established track record of the program and EPA’s programmatic approval.

A. **EPA should withdraw the proposed mercury standard and not finalize it during this RTR rulemaking because of fundamental flaws in (1) the available data and (2) the methodologies that EPA used to develop it.**

EPA should not finalize the mercury standard because of fundamental flaws in the data and analysis the Agency used to generate the proposed standard. These problems are listed below, along with what analyses and information EPA would need in order to finalize a standard. Given the March 2020 deadline to finish the RTR rulemaking, any mercury emission standard needs to

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be issued in a separate rulemaking that is not subject to the RTR deadline in order to provide adequate time for EPA to remedy the identified flaws.

1. The proposed mercury emission standard is based on fundamental flaws in the data and analysis.

   Although the proposed standards in Table 1 are intended to be set at the Section 112(d) floor level, they fail to account for the degree of variability present in steelmaking inputs and thus go beyond the floor without proper justification. The use of a 99% UPL to develop the MACT floor for mercury is appropriate and consistent with EPA’s approach in other rulemakings. The ability of the UPL to properly account for variability here is in question, given that 80% of the sampling results included at least one mass fraction below the detection limit (non-detect), and 8% of total runs included all non-detect values. In sum, only 12% of runs included all detected results, severely limiting the above-detection-limit dataset on which the UPL calculation was based.

   EPA’s equating of hourly mercury test results with annual mercury rates and use of annual scrap usage to determine a pound of mercury per ton of scrap value is problematic for several reasons. First, hourly mercury tests only account for the amount of mercury in the scrap at the time of the test and are not normalized for fluctuations in the short-term scrap usage rates, short-term scrap/iron ratios, or scrap and lime mercury concentration. Therefore, the differences in the mercury emission rates between facilities and their respective operations are not appropriately accounted for in EPA’s calculations, based on the amount of scrap and mercury concentration in the scrap during the time of the test, which could add variability not properly factored into EPA’s calculations. It is inappropriate to assume that the type of scrap, scrap usage, and scrap-to-molten iron ratio at the time of the test were indicative of the long-term averages. Thus, this critical element of the proposal’s analysis is unjustified and cannot support standard-setting.

   Second, EPA’s annualized approach (lb/yr Hg / ton scrap/yr) resulted in the skewness and kurtosis data analyses being represented as a lognormal distribution, whereas the output-based steel production approach described below (that accounts for short-term production rates) is skewed non-normal distribution, according to the prescribed MACT floor methodology. Since the mercury emission data sets are the same between the two input- and output-based approaches, one could properly conclude that the annualized approach is not adequately accounting for the short-term production rate variability and thus it may be comparatively less representative of actual variability in mercury emissions during operations.

   Third, EPA’s analysis appears not to have accounted properly for the scrap mercury content variability and thus does not adequately apply the UPL concept of ensuring that sources controlled to the level of the best performing 5 sources would achieve the limit 99% of the time. As proposed, the UPL calculation does account for some degree of variability, but it is important to address variability among individual loads of scrap in assessing the emissions limit that is achieved by the top 5 performing sources. With a small source category, and thus small number of sources setting

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130 84 Fed. Reg. at 42,748 (proposed 40 C.F.R. Part 63, Subpart FFFF, Table 1).
the floor, a proper UPL analysis is essential to a technically defensible standard that is consistent with the statute. EPA’s technical memorandum regarding its mercury floor calculations acknowledges, however, that its dataset including just five data points is small and, in fact, below the minimum of seven data points that EPA considers the threshold for a “limited dataset.” This limited dataset is the result of calculating a mercury emission per ton of steel scrap value for only the top five sources in the source category and then running the UPL calculation based only on those five sources.

Finally, although EPA’s MACT floor calculation includes a mass concentration value for mercury content in lime, as is discussed in an attached engineering report providing independent evaluation by Barr Engineering Co. commissioned by AISI/USS, this fails to account for potential mercury variability in lime inputs as EPA has appropriately done in other contexts. This approach fails to account for variability in a manner that is appropriate for the source category.

2. To promulgate a reasonable mercury emission standard, EPA would need to develop more data and undertake a better analysis that accurately accounts for variability in emissions due to inputs.

To develop a reasonable emissions standard for II&S facilities, EPA must better account for the variability in mercury content of steelmaking inputs. EPA states that “[s]teel scrap may contain Hg from vehicle switches, but the Hg content of scrap is unknown and unmeasurable,” and acknowledged the potential likelihood that certain types of post-consumer scrap contain mercury. EPA does not attempt, however, to incorporate scrap metal mercury content variability into the UPL calculations. If EPA continues to pursue establishing a mercury standard, EPA needs to revisit the associated MACT floor calculations to better represent the variability of scrap mercury concentration and the associated long-term emission performance. First, EPA should calculate the variability using all viable mercury emissions stack testing results in the UPL analysis and then apply that variability factor to the five best performing sources. EPA also needs to collect additional data given the high proportion of non-detect results in its dataset, as discussed above. Using all of the currently available dataset, and even supplementing that dataset, would more accurately reflect the variability that is expected to occur while remaining faithful to the obligation to set the floor based on the five best performing sources in this source category. Particularly when there is a small dataset for which the raw material content is indicative of emissions, EPA needs to determine the variability that can reasonably be expected from the top performers. Given that the facilities in question were all accepting scrap from suppliers in the NVMSRP program, the variability in scrap obtained from such suppliers is reflected in all of the test results, not just the 5 top performers.

133 Mercury Technical Memorandum, at 5, Table 3.
Second, rather than the approach EPA took in the proposal of calculating the mercury per ton of scrap values by using a source’s annual total scrap input tonnage, EPA should refine its approach by comparing the scrap tonnage used in the individual heats when the ICR stack test results were obtained. Moreover, EPA should look not only at the total scrap use for those heats, but also to the extent possible based on available records, the proportion of automotive shredded scrap used in those heats. This approach would be far more accurate than the one reflected in the proposal, which fails to account for any relation between the stack test data and the scrap used at the time those results were obtained. Failure to take this critical factor into account renders the standard not rationally related to the performance of the top performing sources and thus arbitrary and capricious.

We note that in the NESHAP for the Electric Arc Furnaces (“EAF”) source category, which used similar scrap inputs as the II&S source category but at much greater volumes and proportions, EPA recognized that an additional scrap variability factor to account for variation in mercury emissions would be needed for setting any emission limit. Therefore, EPA did not ultimately establish a numeric mercury emission limit, but working documents from the rulemaking development show a “scrap (Hg) variability” factor were applied to develop a mercury limit. EPA cited the variability of mercury in scrap metal for why emission test averages varied by over two orders of magnitude at a single plant in the EAF source category. If EPA decides to proceed, it needs to seek additional data regarding scrap mercury content and variability similar to the approach EPA took with the EAF NESHAP so that the II&S UPL can account for that variability using standard and accepted methods.

3. Any mercury emission standard needs to be issued in a separate rulemaking apart from the current RTR rulemaking, given the timing of the RTR.

Given the need to finalize this RTR in March 2020 and the obvious data collection and analysis need to generate a sound mercury standard that will take at least a year, EPA should not finalize the proposal at this time but instead should withdraw it and defer action to allow EPA to address the flaws in the proposed standard raised here. The proposed mercury standard should be withdrawn and, if the agency ultimately determines a standard must be set, EPA should issue a new, separate proposal because the changes necessary to both the dataset and the floor setting methodologies are sufficiently great that interested persons will need an opportunity to comment on EPA’s efforts to address them. In short, any mercury gap-filling should proceed on an independent track from the RTR, and it would be arbitrary and capricious for EPA to finalize a mercury standard in reliance on the limited data it has and particularly using the flawed methodologies reflected in the proposal.

As demonstrated above, the proposed mercury emission standard: (1) is based on a limited emissions dataset from one-time ICR stack testing that is insufficient to account for the variability in mercury content in automotive shredded scrap inputs to the steelmaking process; (2) calculates

135 40 C.F.R. § 63.10685(b).
the facilities’ lb Hg/ton scrap values using annual scrap usage data, but it does not account for the
type of scrap, mass of scrap usage, and scrap-to-molten iron ratio at the time of the ICR stack tests;
(3) relies on flawed methodologies that further exacerbate the impact of the data limitations; and
(4) fails to incorporate additional techniques for factoring variability in input materials that have
been applied in other contexts and are equally appropriate here. EPA can and should determine
that it currently lacks adequate data to establish a mercury standard, in light of the limited
timeframe allowed under the judicial deadline to complete this rulemaking.\textsuperscript{137} Such a decision
would be afforded an “extreme degree of deference” by the D.C. Circuit on review.\textsuperscript{138} EPA’s
obligation under the court order is to complete the RTR. Filling a perceived gap in the original
standard is not mandated under Clean Air Act Section 112 generally and certainly is not compelled
to be part of the RTR. Accordingly, EPA need not finalize the mercury proposal by the March
2020 RTR deadline. If EPA promulgates now, the standard will necessarily lack adequate data
and a record to support it and thus would not only be ill-advised, but also arbitrary and

capricious.\textsuperscript{139}

B. If EPA nonetheless proceeds to finalize a mercury standard during this RTR
rulemaking, several changes to the numeric standard calculation and the
proposed compliance options are necessary.

1. If EPA issues a mercury standard, it needs to correct the MACT floor.

As explained in detail in section V.A above, the proposed mercury standard is based on a
MACT floor calculation that unnecessarily ignores relevant data despite an already small dataset
and incorporates unsound methodologies that fail to account for mercury variability. As a result,
EPA needs to recalculate the MACT floor in line with our recommendations above before it can
proceed.

\textsuperscript{137} We do not concede that establishing a mercury emissions standard for the II&S source category is necessary at all,
in light of the low risk from the source category.

\textsuperscript{138} \textit{U.S. Sugar Corp. v. EPA}, 830 F.3d 579, 623 (D.C. Cir. 2016) (quoting \textit{Kennecott Greens Creek Mining Co. v. Mine
Safety & Health Admin.}, 476 F.3d 946, 954-55 (D.C. Cir. 2007).

\textsuperscript{139} In 2003, EPA regulated HAP metals using PM as a surrogate but excluded mercury from that grouping based on
its conclusion that mercury’s high volatility makes PM an inadequate surrogate. 68 Fed. Reg. at 27,656. As noted
above, due to test results then showing very low mercury levels and the lack of emissions control systems to further
reduce mercury emissions, EPA did not adopt mercury standards. EPA received and granted a reconsideration petition
agreeing to evaluate whether to develop an emission standard for mercury, “based on some type of work practice
which would remove mercury from scrap metal.” Letter from Jeffrey Holmstead, Assistant Adm’r, EPA, to James
Pew, Earthjustice Response to Petition for Recons. submitted on behalf of Sierra Club (Mar. 18, 2005), EPA-HQ-
OAR-2002-0083-0028. Later, EPA sought and was granted a voluntary remand without vacatur to consider, among
other things, its response to the reconsideration petition. \textit{Order, Sierra Club v EPA}, No. 03-1205 (D.C. Cir. June 10,
2010). Granting a reconsideration petition does not require EPA to take the action requested; it merely commits EPA
to consider the issue. EPA is in that process now but is not required to complete it in this RTR.
2. If EPA finalizes a mercury standard, compliance options like obtaining scrap through the NVMSRP or equivalent programs and certifying that automotive shredded scrap is unlikely to contain mercury need to be included.

All of the facilities in the II&S source category that use automotive shredded scrap inputs obtain automotive shredded scrap solely from suppliers participating in the NVMSRP. Furthermore, the emissions tests conducted to establish the MACT floor limits and thus the MACT for mercury in this proposal were based on these very facilities participating in the program. The NVMSRP seeks to ensure that mercury switches are removed from scrap used in II&S and other industries’ production processes. This approach allows for responsible recycling of vehicles while minimizing the likelihood of mercury emissions from companies using this scrap to make new products. Based on this, EPA has appropriately proposed to account for the NVMSRP (assuming a standard issues).

If EPA proceeds with a mercury standard, the proposal to allow facilities to satisfy the mercury requirements by certifying that their scrap is “not likely to contain motor vehicle scrap” in proposed Section 63.7791(b) is reasonable but needs to be revised as recommended below. For example, EPA needs to clarify that the option applies to “scrap not likely to contain automotive shredded scrap,” rather than all “motor vehicle scrap” as it is currently proposed and regulatory language changes should be made to reflect this clarification. This is because mercury switches, the driver of mercury emissions, are not present in all motor vehicle scrap. Rather, mercury switches are typically only present in shredded automotive scrap. Facilities should thus be able to comply by certifying that scrap inputs are not likely to contain automotive shredded scrap. Additional recommended revisions are discussed in Sections V.B.4 and 5 below.

Finally, if EPA proceeds now, it should include the third proposed compliance alternative of obtaining scrap from another EPA-approved program similar to the NVMSRP. The proposal to allow facilities to currently satisfy the mercury requirements by obtaining scrap through equivalent programs to the NVMSRP or allow certification that the scrap meets similar specifications is similarly appropriate because a functional equivalent to the NVMSRP provides similar assurance that facility mercury emissions are low and are declining. If there is a standard, it should include each of these aspects with the modifications recommended, and should make the following additional revisions to the proposed language to improve implementation.

3. If EPA proceeds with a mercury standard, it needs to clarify that sources may certify that their scrap is not likely to contain mercury and be deemed compliant if they use less than 10% automotive shredded scrap per ton of steel produced.

Facilities that use small amounts of automotive shredded scrap, even from non-NVMSRP suppliers, relative to other inputs per ton of steel produced would not be expected to emit at levels exceeding the emissions limitations reflected in Table 1. As the proposal acknowledges, the mercury content associated with mercury switches in older, end-of-life vehicles is the basis for the mercury standard.\textsuperscript{140} Mercury switches are not present in all scrap, and not even in all automotive

\textsuperscript{140} 84 Fed. Reg. at 42,730.
scrap. Rather, mercury switches are only potentially present in shredded automotive scrap. Because of this, facilities using small amounts or no automotive shredded scrap would not be expected to have mercury emissions in excess of the proposed standard. Thus, sources using minimal amounts of automotive shredded scrap should not be burdened with the costs of testing or the switch recovery programs, particularly given the low risk modeled for the source category. EPA should, therefore, modify the proposed 40 C.F.R. Section 63.7791(b) to allow facilities to certify that they use only minimal amounts of automotive shredded scrap inputs, such as 10% automotive shredded scrap per ton of steel produced. So long as a facility does not use more automotive shredded scrap than the threshold, that certification should constitute its compliance demonstration. This would enable facilities that use very minimal amounts of automotive shredded scrap or that use automotive shredded scrap only occasionally based on the scrap supply market, and are thus unlikely to exceed the mercury standard, to be deemed compliant, as well.

4. If EPA proceeds with a mercury standard, it should clarify that facilities will be deemed compliant by certifying that their scrap is unlikely to contain mercury if and when the NVMSRP ends.

EPA should acknowledge that when the NVMSRP program ends, that will establish compliance with the proposed mercury standard because it will signal achievement of substantial elimination of mercury switches from automotive scrap. Consistent with the compliance option allowing purchase of scrap from NVMSRP program participants to comply with the proposed mercury requirements, EPA should include in any final rule a provision that when the NVMSRP program ends sources would be deemed compliant with the mercury standard (because EPA would have deemed that the NVMSRP is no longer needed to reduce mercury switches from automotive scrap).

EPA should also revise proposed Section 63.7791(c) or add a new Section 63.7791(d) to allow sources to otherwise show that their shredded motor vehicle scrap is unlikely to contain mercury. While we appreciate the provision for other alternative “programs,” the fact may be that there is no need for such a program due to the diminished presence of mercury. For example, if the NVMSRP program has ended with a finding that the mercury switches remaining in vehicles on the road are minimal or if a scrap dealer used only recycles post-2003 vehicles, the use of automotive scrap should not contain any appreciable mercury. In other words, at some point, the number of recycled vehicles containing mercury switches will diminish to the extent that mercury in automotive scrap is no longer a concern. At this point, facilities should be able to rely on some provision in Section 63.7791 to conclude that their scrap is unlikely to contain mercury switches.

Such an approach is reasonable because the standard is driven by the use of automotive shredded scrap at BOPF shops and the mercury content in that scrap, and the NVMSRP is aimed at removing mercury switches from automotive shredded scrap. Meeting the NVMSRP’s program goals, which should be the rationale for ending the program, will occur when mercury switches are sufficiently removed from automotive scrap. When that has occurred, it will mean that the remaining automotive scrap inputs available to II&S facilities will in effect all satisfy the NVMSRP criteria, and facilities should be considered to be in compliance with the mercury emission standard. In that case, it would not add value to require further compliance with the
administrative burdens associated with complying with the standard, since the source will have been effectively eliminated.

5. If EPA proceeds with a mercury standard, it should align the technical compliance requirements related to the NVMSRP with a similar requirement in the EAF source category, so that a plant is not subject to different compliance regimes.

The proposed standards for the II&S source category are very similar to the requirements for facilities in the EAF area source standards to obtain scrap from participants in the NVMSRP. It appears, however, that certain changes were made to the regulatory language for the II&S category. These changes are unnecessary and the language should be revised to maintain consistency with the existing EAF NVMSRP regulatory language. Some companies with facilities subject to the Subpart FFFFF standards for II&S sources also operate EAF facilities subject to the Subpart YYYYY standards, and they purchase and manage scrap that is charged both into BOPF vessels and the EAF at a corporate level, using the same policies and management methods to obtain scrap for both source categories. Since these companies have area source EAF facilities that must comply with the mercury switch program requirements in Subpart YYYYYY, their entire scrap management system is already compliant with the motor vehicle scrap management requirements in those standards. The language differences between Subpart YYYYYY and the proposed Subpart FFFFF motor vehicle scrap management requirements could cause issues in managing these companies’ scrap supply chains and ensuring compliance with both regulations. The proposal does not explain why these differently worded requirements are being imposed on II&S facilities, particularly given that EAF sources use a greater proportion of scrap inputs than II&S BOPF sources and that doing so would impose burdens on facilities, including the need to modify contracts and additional administrative costs. Because of the identical supply chain for BOPF shops and EAFs, there should be no differentiation in the requirements.

Specifically, the final rule should incorporate the following revisions to the proposed language.

- **Proposed 40 C.F.R. § 63.7791(a).** This provision is inconsistent with the requirements that apply to the NVMSRP as it is considered an “approved mercury program” in 40 C.F.R. § 63.10685. Since both rules will apply to companies that manage scrap for both area source EAFs and major source II&S BOPFs the following clarifications in the final rule would help the two rule requirements match:
  - To better match the requirements in 40 C.F.R. § 63.10685(b), suggest modifying 40 C.F.R. § 63.7791(a)(1) to read: “You must obtain all post-consumer scrap containing shredded motor vehicle scrap likely to contain vehicle scrap from scrap providers who participate in the NVMSRP. The NVMSRP is an EPA-approved program under this section unless and until the Administrator disapproves the program (in part or in whole).”
  - To better match the requirements in 40 C.F.R. § 63.10685(b)(2), suggest modifying 40 C.F.R. § 63.7791(a)(2) to read: “You must certify in your notification of compliance status that you purchase shredded motor vehicle post-consumer steel scrap according to paragraph (a)(1) above.”
Proposed 40 C.F.R. § 63.7791(c). This proposed provision also does not match “approved mercury program” requirements in 40 C.F.R. § 63.10685, and should be revised as follows:

“(1) You must obtain all post-consumer scrap containing shredded motor vehicle scrap likely to contain vehicle scrap from scrap providers who participate in a program for the removal of mercury switches that has been approved by the Administrator based on the criteria in paragraphs (c)(1)(i) through (iii) of this section.”

Proposed 40 C.F.R. § 63.7791(b). This proposed provision includes specific requirements for each scrap supplier that supplies scrap not likely to contain motor vehicle scrap that are not included in the EAF NESHAP. See below:

EAF language (40 C.F.R. § 63.10685(b)(4)): “For scrap not subject to the requirements in paragraphs (b)(1) through (3) of this section, you must certify in your notification of compliance status and maintain records of documentation that this scrap does not contain motor vehicle scrap.”

Proposed Iron and Steel language (40 C.F.R. § 63.7791(b)(1)): “Obtain information from scrap suppliers or other entity with established knowledge of scrap content that the steel scrap used is not likely to contain shredded motor vehicle scrap and maintain records of the information.”

Proposed Iron and Steel language (40 C.F.R. § 63.7791(b)(2)): “Certify in your notification of compliance status that the scrap is not likely to contain shredded motor vehicle scrap, according to the information obtained and recorded.”

Proposed 40 C.F.R. § 63.7791(b). This proposed provision is more detailed than the Subpart YYYYY language in 40 C.F.R. § 63.10685(b)(4), but due to the difference in wording it creates ambiguity. While we interpret the proposed language to be no more stringent than the Subpart YYYYY certification the more detailed certification language in 40 C.F.R. § 63.7791(b)(1) could imply that a more stringent certification is required of Subpart FFFFF facilities. To better match the requirements in 40 C.F.R. § 63.10685(b)(4), we suggest deleting the proposed 40 C.F.R. § 63.7791(b) and inserting the following language:

“For scrap not subject to the requirements in paragraphs (a) or (c) of this section, you must certify in your notification of compliance status and maintain records of documentation that this scrap does not contain motor vehicle scrap.”

Proposed 40 C.F.R. § 63.7840(f)(1). This provision should be modified to comport with the requirements in 40 C.F.R. § 63.10690(b)(3)(ii), to read:

“This facility participates in and purchases shredded motor vehicle scrap only from scrap providers who participate in a program for removal of mercury switches that
has been approved by the EPA Administrator and has prepared a plan demonstrating how the facility participates in the EPA-approved program, in accordance with § 63.7791(a)(4) or (c)(4).”

- **Proposed 40 C.F.R. § 63.7852.** The following proposed definitions should be revised to be consistent with the definitions in 40 C.F.R. § 63.10692:

  - **Shredded motor vehicle scrap** means post-consumer scrap from discarded vehicles or automobile bodies, including automobile body hulks that have been processed through a shredder. Motor vehicle scrap does not include automobile manufacturing bundles or miscellaneous vehicle parts, such as wheels, bumpers or other components that do not contain mercury switches. Motor vehicle scrap typically is not sold separately but is combined with other steel scrap for sale.

    Scrap provider means the company or person (including a broker) who contracts directly with a steel mill to provide steel scrap that contain shredded motor vehicle scrap. Scrap processors such as shredder operators or vehicle dismantlers that do not sell scrap directly to a steel mill are not scrap providers.

    Steel scrap means pre-consumer and post-consumer discarded steel that is processed by scrap providers for resale (post-consumer) or used on-site (pre-consumer or run-around scrap from within a facility or company). Post-consumer steel scrap may or may not contain motor vehicle scrap, depending on the type of scrap. In regard to motor vehicle scrap, steel scrap only can be classified as “scrap that is likely to contain motor vehicle scrap” vs. “scrap that is does not likely to contain motor vehicle scrap,” as determined by the scrap provider.

- The allowance for specialty metal scrap from motor vehicles in the EAF rule is not in the proposed Subpart FFFFE rule. We suggest the following language be added into the Proposed Rule from 40 C.F.R. § 63.10685(b)(3):

    **Option for specialty metal scrap.** You must certify in your notification of compliance status that the only materials from motor vehicles in the scrap are materials recovered for their specialty alloy (including, but not limited to, chromium, nickel, molybdenum, or other alloys) content (such as certain exhaust systems) and, based on the nature of the scrap and purchase specifications, that the type of scrap is not reasonably expected to contain mercury switches.

6. If EPA adopts a mercury standard in the final rule, the emissions testing compliance option should be revised to be less frequent, allow testing of representative units, and correct technical problems.

   For facilities that select the Table 1 option, testing should be required once per Title V permit term, not annually. In addition, EPA should allow facilities with similar units to test one
representative source for mercury emissions. Finally, listed below are a number of corrections to the proposed regulatory language that are needed to ensure the ability of facilities to comply.

a. Mercury emissions testing should only be required once per permit term.

The proposal would require annual testing for sources opting to comply under Table 1.141 This frequency should be revised to once per five-year Title V permit term, which is consistent with frequencies for other Title V testing requirements for the sources, such as for secondary BOPF baghouses.142 More frequent testing is unnecessary given that emissions are steadily declining among the source category in conjunction with the depletion of mercury switches in automotive scrap. If EPA believes that more frequent than once-per-term testing is needed, it should adopt a twice per five-year permit term, similar to the testing frequency for primary BOPF controls, given the high cost of testing. Requiring annual testing would be excessive, costly, without basis, and inconsistent with any other requirements in the Subpart FFFF standards.

b. Facilities should be allowed to test one representative unit to satisfy mercury emissions testing.

In any final rule and consistent with the approach EPA took in the ICR testing, EPA should explicitly provide for similar units at a source to rely on the testing of one of those units for Table 1 compliance demonstration purposes, where the units are exhausted to the same type of control device, processed the same types of materials, were similar size and design, and have similar operating conditions.143 For example, Facility No. 39017110000392557 has two BOPF primary control device scrubbers that are similar, so testing for one is indicative of compliance for the other given the similar operations. It would be redundant, unnecessary, and costly to require a full performance test on each as the inputs are the same.

c. For Table 1 compliance testing, EPA should allow sources to tests only the BOPF vessels where appropriate (i.e., the BOPF vessel process and sources controlling charging and tapping operations).

The primary source of mercury emissions to the extent they occur is from the BOPF vessels, as these are the only units that utilize scrap in the BOPF group. The remaining sources in the BOPF group operate either before the scrap is added or well after that point. For instance, hot metal relading, desulfurization, and skimming are all performed before scrap addition. Thus, mercury testing should not be required. Indeed, a limit based on scrap addition for these units makes no sense as the scrap addition is zero. In essence, all units prior to scrap charge should be removed from the BOPF group.

\[141\] 84 Fed. Reg. at 42,742 (proposed 40 C.F.R. § 63.7821(e)).
\[142\] 40 C.F.R. § 63.7821(c).
\[143\] Mercury Technical Memorandum, App. B, at B-7-B-8, EPA-HQ-OAR-2002-0083-0958.
At the other end of the process, ladle metallurgy refining takes place long after the completion of the scrap charge, such that any mercury would already be volatilized and thus would no longer be present to be emitted. A review of the ICR testing data supports this conclusion. For example, total ladle refining furnace mercury emissions represented just 1.3% of the total 785 pounds of annual mercury emissions. Therefore, testing should only be required for the BOPF vessel process and for sources controlling charging and tapping operations.

d. **EPA should incorporate technical corrections to the proposed regulatory language.**

We recommend the following revisions to address miscellaneous technical/procedural issues with the proposed regulatory language and for certain of the above-raised issues:

- **Proposed 40 C.F.R. § 63.7821(e).** This provision requires annual performance testing for mercury. For the reasons described above, the annual testing requirement is unnecessary and inappropriate. In the event that EPA nonetheless retains the annual testing requirement, revisions to the proposed language regarding time between performance tests requires revision to clarify the point at which facilities should begin to calculate these dates. EPA should revise the proposed language as follows:

  For each BOPF Group, if complying with the mercury emission limit in Table 1, you must conduct subsequent performance tests **annually once during each term of your title V operating permit** at the outlet of the control devices for the BOPF Group, with no two consecutive annual performance tests occurring less than 3 months apart or more than 15 months apart.

- **Proposed 40 C.F.R. § 63.7825(a)(2).** This provision requires either a single compliance test with all affected units in operation or separate compliance tests on each emission unit in the BOPF Group. Most facilities have multiple stacks that would need to be tested under the current Proposed Rule. Simultaneously testing all stacks during a single compliance testing event would be difficult or impossible. This leaves the option of performing separate compliance testing on each emission unit. Proposed Section 63.7825(a)(2) requires that when units are tested separately, they must be tested “as soon as is practicable,” which is not defined. EPA should allow a three-month period for all stacks to be tested and allow for one notification of compliance status be submitted 60 days after the final performance test. Additionally, EPA can adequately assess the Hg emissions by testing only those units that actually use scrap inputs, and this should be accounted for in the proposed regulation. To implement this, EPA should create a new subparagraph 63.7825(a)(3) as follows:

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144 Mercury Technical Memorandum at 3, Table 1, EPA-HQ-OAR-2002-0083-0958.
145 Not providing regulatory language for all of the issues mentioned in this section of the comments does not obviate our request for changes responsive to the concerns noted in this section or elsewhere in the comments.
Testing of related BOPF group units shall be conducted within a 3 month period. For the purposes of submitting the notification of compliance status under 40 C.F.R. § 63.7840(e), the performance test shall be considered complete when the final BOPF Group unit control device is tested.

Since the BOPF Group mercury limit applies to all BOPF shop steelmaking operation units, the compliance demonstration for emissions testing requires mercury emissions from all BOPF group stacks to be added up to demonstrate compliance. This calculation cannot be made until all BOPF Group sources have been tested. Under proposed Section 63.7840(e), facilities are required to submit a notification of compliance status within 60 days of completion of the performance test. The suggested revision would help address this concern. Facilities are also required to provide a 60-day notification of intent to conduct performance testing. Therefore, the proposal should also provide that the 60-day notice must be submitted at least 60 days prior to the first BOPF Group unit control device test. The initial testing notification should be required to include a schedule of when testing of other BOPF Group unit control devices will be tested, rather than require additional notification for subsequently tested sources.

**Proposed 40 C.F.R. § 63.7825(a).** Modify to include the following language: “If a facility has multiple BOPF units operating in their BOPF shop that exhaust to the same type of control device, process the same types of materials, have the similar design, and have similar operating conditions, the facility may test only one BOPF unit. If a facility has multiple units, such as ladles, etc., that exhaust to the same control device, process the same types of materials, have the similar design, and have similar operating conditions, the facility may test only one unit.”

**Proposed 40 C.F.R. § 63.7825.** Mercury testing samples were collected during the ICR process following sampling procedures in 40 C.F.R. §§ 63.7822(f), (g), and (h), which dictate when sampling begins and ends during specific process BOPF operations for particulate testing. The same procedures should apply to mercury testing. These procedures should be incorporated by reference in the mercury testing requirements. Accordingly, proposed Section 63.7825 should be modified to include the following:

[new letter] Mercury test sampling should be conducted following procedures in Section 63.7822(f), (g), and (h) as applicable.

**Proposed 40 C.F.R. § 63.7825(b)(2).** This provision requires a minimum sample volume of 60 dscf of gas during each mercury test run. It is inappropriate to collect 60 dscf when using Method 30B because the method itself contains guidelines for selecting proper sampling rates. The collection of 60 dscf should be clarified to only apply to Method 29 or other isokinetic sampling methods. EPA should also include Method 101A, *Determination of Particulate and Gaseous Mercury Emissions From Sewage Sludge Incinerators*, which is a viable alternative to both Methods 29 and 30B.
Proposed 40 C.F.R. § 63.7825(c). The equation in this provision is wrong because it incorrectly substitutes standard sample volume for standard sample flow. It should be corrected as follows:

\[ E = \frac{(C_s \times Q_{std})}{K} \]

where \( Q_{std} \) is the total standard stack flow over the length of the sampling run.

Proposed 40 C.F.R. § 63.7825(f). The calculation methodology overestimates emissions by double counting emissions for similar sources. The methodology requires that the mass emissions be calculated for each individual unit in a BOPF group and then summed to obtain total emissions. This methodology is only accurate if every load of scrap is processed through every individual BOPF group source for every heat, however, and that is not the case. For example, several facilities in the source category have separate scrubbers on each of their BOPF Vessels. Any individual heat will only have emissions through one of the individual scrubbers. Other facilities have multiple ladle refining furnace vessels, and any individual heat would go through just one of those vessels. A more appropriate calculation methodology would be to calculate emissions from just one of the similar sources, since only one of the sources operates at a time for a given scrap charge. This approach is consistent with EPA’s MACT floor analysis, which did not double count similar sources since operating hours of each source over the course of the year was factored into the lb/year emissions used in the MACT floor analysis.

C. EPA should revise the compliance requirements for the NVMSRP and equivalent programs to rely on the fact that they are approved programs.

In order to use the NVMSRP or equivalent program option, EPA lists in proposed Section 63.7791(a) a host of requirements that companies will need to meet. A key purpose of the NVMSRP was to have suppliers register and participate so that companies could rely on that participation to prevent mercury from entering their feedstocks in the form of automotive shredded scrap. Since its initiation, the NVMSRP program has proven to be a success. As recognition of that success, in 2017, EPA, along with the original parties to the 2006 agreement, came together to extend the program through 2021. Unfortunately, the proposed language fails to recognize that the industry has substantially invested to make the program a success and instead would put individual companies in the role of policing the program. Companies need to be able to rely on the program and that its suppliers are participants therein. Nothing more should be required. Specifically, EPA should delete Section 63.7791(a)(3)-(5). Companies are not in a position to renegotiate supplier contracts to allow them to enter and inspect suppliers. Moreover, EPA is unclear about what “other corroboration” even means in the context of the program. Their participation in the program should be sufficient. Finally, any broker contracts would provide that the scrap needs to be from NVMSRP-participating suppliers and it is entirely unclear how EPA expects companies to ensure that suppliers are “implementing appropriate steps to minimize the

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146 Memorandum of Understanding to Extend the National Vehicle Mercury Switch Recovery Program (Dec. 29, 2017),
presence of mercury in scrap from end-of-life vehicles.” We do that by contracting for scrap from suppliers participating in the program.

Given the new onerous requirements, which should not be adopted, EPA’s cost estimates for the implementation of the NVMSRP (or equivalent) program are too low. Further, although EPA reasonably declined to adopt beyond-the-floor mercury standards, it grossly underestimated actual costs. If EPA proceeds to issue any mercury standard, cost estimates should be revised and then no beyond-the-floor standards should be adopted.

1. The proposed cost estimates for implementing the NVMSRP (or equivalent) program are too low and need to be revised.

If a mercury standard is issued, EPA should revise the cost-effectiveness analysis to better account for the costs of the NVMSRP (or equivalent) program. Specifically, the proposal needs to better account for the cost of the NVMSRP option, which it estimates at $1,058 per facility and $11,638 across the industry,147 with similar costs assumed for certifying compliance not likely to contain automotive scrap.

While EPA correctly states that companies are already participating in the NVMSRP, the requirements in the Proposed Rule take the verification process to more burdensome level, which will impose significant additional costs. Creating the plans required is likely to far exceed the proposed approximate $1,000 estimate, given the labor and supervision required, not to mention ongoing plan updates. Moreover, the proposed cost estimate entirely excludes consideration of the massive costs that would be required to satisfy the due diligence obligations the proposed regulatory language would create. For example, the proposed requirement to “conduct periodic inspections or provide other means of corroboration to ensure that scrap providers and brokers are aware of the need for and are implementing appropriate steps to minimize the presence of mercury in scrap from end-of-life vehicles”148 would impose an obligation on II&S facilities that would be both onerous and expensive. It would also be potentially impossible to satisfy since existing contracts are in place that do not provide authority for the purchaser to inspect suppliers or otherwise ensure their “appropriate” implementation of mercury removal practices.

Instead of these requirements, EPA should simply require that the company purchase from suppliers that state they are participating in the NVMSRP (which may be reflected on invoices or in contracts). Additional obligations need not be imposed because EPA’s record for this rulemaking establishes that the NVMSRP is an effective program for removing mercury switches from shredded automobile scrap. EPA can reasonably rely on that record.

Similarly, just as the NVMSRP is an EPA approved program, any alternative “approved mercury program” contemplated in the proposal would also be, and II&S facilities should be able to rely on the stipulation in contracts with their scrap suppliers that any shredded automotive scrap

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147 84 Fed. Reg. at 42,737.
148 84 Fed. Reg. at 42,741 (proposed 40 C.F.R. §§ 63.7791(a)(5) and (c)(5)).
received is from NVMSRP (or similar program) participants and is compliant with the program’s standards.

2. EPA properly proposes not to adopt beyond-the-floor standards for mercury emissions, but drastically underestimated costs associated with such potential standards.

In the proposal, EPA evaluates additional control technologies that could be used for beyond-the-floor standards, concluding appropriately that they would not be cost effective and thus should not be adopted. In particular, EPA evaluates addition of requiring ACI systems with baghouse on BOPF sources. EPA estimates the cost effectiveness of these controls at $136,000/ lb. of mercury removed. This result would fail any cost-effectiveness analysis. If the proposal had accurately calculated the costs of control, the beyond-the-floor standards would be even less cost effective.

The proposal estimates that installing baghouses for those sources where they are not currently present and ACI systems would cost $24 million, as well as $38 million in annualized costs. In particular, to add a new polishing baghouse to BOPFs with existing ESPs, EPA estimates it would cost $2.98 million in capital costs per relevant source, and that the annualized cost would be $1.8 million per year, to support an anticipated cost effectiveness of $136,000/ lb. of mercury removed. All companies in the II&S source category have BOPFs with ESPs, and the estimated costs are vastly understated.

AISI/USS commissioned an engineering analysis by Barr Engineering Co. to independently evaluate anticipated costs of installing baghouses at a BOPF already equipped with an ESP, which is submitted with these comments. Barr Engineering Co. produced an engineering cost estimate to install a polishing baghouse downstream of the No. 3 SP BOPF ESP at Facility No. 18089110000397794. Barr Engineering Co. found that it would cost $24.7 million in capital costs alone. That figure excludes the costs of an extended outage, necessary to tie-in the new baghouse ductwork to the existing ESP, which was estimated to require seven additional days of lost production at a cost of $2.2 million, causing the cost required to rise to $26.9 million for a single source. Barr Engineering Co. determined the annual operating cost at the source would be $6.8 million per year. Based on Barr Engineering Co.’s engineering estimate, the cost effectiveness would be $598,000/lb. of mercury removed.

150 Id.
151 Rich Zavoda stated that the cost numbers are $2.98 TCI and $1.8 annual total costs for units where an additional polishing baghouse would be needed. The docket materials do not show that clearly. Please confirm and provide a citation.
153 Id. at Table 1.
154 Id. at Table 2.
155 Id. at Table 3.
EPA appropriately recognizes that the annual controls would become significantly less cost effective over time, as the quantity of mercury switches in automotive scrap decreases, making the beyond-the-floor standards even less reasonable. EPA anticipates that although the added controls would reduce 280 lbs. of mercury “for the first few years of compliance,” that number would decline as the amount of mercury in scrap decreases over time.\textsuperscript{156} As noted above, mercury switches have been banned in automobiles since 2001. Thus, with each year, the number of mercury switches in automotive scrap reduces as fewer and fewer older vehicles are being retired. This trend is illustrated in the NVMSRP switch retirement model data, cited in EPA’s technical memorandum supporting the mercury standard development,\textsuperscript{157} which shows a steady decrease in the number of mercury switches retired per year since at least 2011, a year prior to the testing conducted in response to EPA’s Information Collection Request for this rulemaking.

VI. EPA Should Make Changes To The Way It Addresses SSM And Reporting Issues.

Certain aspects of the Proposed Rule, including the proposed elimination of the startup, shutdown, and malfunction (“SSM”) exemption, are not based on EPA’s authority to conduct residual risk and technology review rulemakings under Clean Air Act Sections 112(f)(2) and (d)(6) but, instead, invoke EPA’s discretion to exercise its other statutory authorities in the same rulemaking. The proposed elimination of the SSM exemption would bring the Subpart FFFFFF standards in line with relevant court decisions by the D.C. Circuit. In certain cases, EPA’s proposed language would create redundancies and pose problems for compliance that should be addressed.

EPA should not finalize the additional recordkeeping and reporting requirements included in the proposal that would add regulatory burden without adding apparent value. EPA is proposing an expansion of the recordkeeping and reporting requirements with the following provisions:

§ 63.7835 What other requirements must I meet to demonstrate continuous compliance?
Except as provided in § 63.7833(g), you must report each instance in which you did not meet each emission limitation in § 63.7790 that applies to you. This includes periods of startup, shutdown, and malfunction. You also must report each instance in which you did not meet each operation and maintenance requirement in § 63.7800 that applies to you. These instances are deviations from the emission limitations and operation and maintenance requirements in this subpart. These deviations must be reported according to the requirements in § 63.7841.

\textsuperscript{156} 84 Fed. Reg. at 42,732.
\textsuperscript{157} Mercury Technical Memorandum at 9, Fig. 1, EPA-HQ-OAR-2002-0083-0958.
(a) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure, record the date, time and duration of each failure.

(b) For each failure to meet an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.\(^{158}\)

§ 63.7841 What reports must I submit and when?

. . .

(b) . . .

(4) If you failed to meet an applicable standard, the compliance report must include the number of failures to meet an applicable standard and the date, time and duration of each failure. For each failure, the compliance report must include a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.\(^{159}\)

§ 63.7842 What records must I keep?

(a) . . .

(2) Records of the date, time and duration of each failure to meet an applicable standard.

(3) For each failure to meet an applicable standard, a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.

(4) Records of the actions taken to minimize emissions in accordance with § 63.7810(c), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.\(^{160}\)

The preamble explains that the requirement would “ensure that there is adequate information to determine compliance, to allow the EPA to determine the severity of the failure to meet an applicable standard, and to provide data that may document how the source met the general duty to minimize emissions during a failure to meet an applicable standard.”\(^{161}\) Unfortunately, the preamble provides no information or examples of how or why the absence of this information has created any issues for EPA or those subject to the regulation. As a practical matter, it may not be possible to estimate the quantity of “each regulated pollutant” emitted over any emission limit.

\(^{158}\) 84 Fed. Reg. at 42,744 (proposed 40 C.F.R. § 63.7835) (emphasis added).

\(^{159}\) 84 Fed. Reg. at 42,744 (proposed 40 C.F.R. § 63.7841) (emphasis added).

\(^{160}\) 84 Fed. Reg. at 42,746 (proposed 40 C.F.R. § 63.7842) (emphasis added).

\(^{161}\) 84 Fed. Reg. at 42,735.
The NESHAP provides for work practices and involves regulation of HAP emissions, with use of surrogates. Given that SSM or deviation reports may be due to a permitting authority in relatively short order, it could be very difficult to meet this requirement even where an estimate could be generated. While AISI/USS appreciate that agencies like to have more information rather than less, minimizing regulatory burden and avoiding information “creep” that tends to institutionalize higher costs are important concerns for regulated entities. It is unclear why this information needs to be supplied on an ongoing basis, rather than providing it in response to an expected, infrequent request from a regulatory authority. Thus, EPA should remove the proposed requirements to provide estimates quantifying emission limit exceedances or methods used to estimate those emissions in the proposed recordkeeping and reporting requirements in 40 C.F.R. Sections 63.7835, 63.7841, and 63.7842.

VII. The Proposed Use Of Electronic Reporting Is Generally Reasonable, But Some Changes To The Reporting Requirements And The Compliance Template Need To Be Made.

EPA proposes to require electronic reporting and recordkeeping for the II&S source category. This proposal is consistent with regulated facilities’ efforts to increase efficiencies of operations and oversight at their facilities. It is critical, however, that the transition to electronic reporting for standards such as Subpart FFFFF, which were not originally promulgated with electronic reporting in mind, is thoughtfully managed to avoid creating problems for companies needing to comply with the recordkeeping and reporting obligations. Some key considerations of this process are:

- The addition of electronic reporting should not establish any new data requirements beyond what is currently in a regulation. All data requirements should tie to a regulatory citation.
- Any reporting system should allow companies the option to provide explanatory comments on data or information submitted.
- Electronic reporting should not place further restrictions on who is eligible to submit a report.
- Sufficient compliance time is allowed for companies to implement the revised requirements and to integrate EPA and company systems.
- Regulatory language allows companies to submit hardcopy reports if there is an issue with EPA’s system availability or company systems.
- Electronic reporting allows for the submission of Portable Document Format (PDF) documents.
- The reporting system should have the capability for updates, or corrections, to be submitted.
- The agency works with other regulatory authorities (i.e., states, local agencies) to establish comparable or compatible electronic systems. It is expected that companies reporting electronically to EPA will still have to submit hardcopy reports to other agencies that do not have electronic systems, thereby reducing or eliminating burden savings associated with EPA electronic reporting, and instead imposing an additional burden on facilities to comply.
- Any reporting templates should be available for review at the time a rule is proposed.
The Proposed Rule would appropriately allow for delays in electronic reporting in instances where doing so is impossible or at least impracticable, including outages of EPA’s system and events constituting force majeure. In either of these scenarios, facilities subject to Subpart FFFFF reporting obligations would be unable to complete electronic reporting when required. EPA thus appropriately proposes to acknowledge these limitations and not penalize facilities for circumstances out of their control that prevent timely reporting. The detailed showing that would be required for facilities to invoke these extension provisions for submission of electronic reports further supports that the proposal to include these exceptions is reasonable and appropriate.

One key concern with the proposal is that any future changes to EPA’s proposed reporting template for II&S sources will be made available only through the EPA’s Compliance and Emissions Data Reporting Interface (“CEDRI”) website. Although the AISI/USS have reviewed the proposed template in the rulemaking docket, future changes to the template may create problems that may not become immediately apparent to facilities in the source category. Regulated entities do not currently track changes to the CEDRI website, and requiring them to do so will impose an additional burden (and cost). Moreover, facilities subject to the Subpart FFFFF standards could risk rejection of their reports or worse, noncompliance, if they inadvertently use the wrong template should EPA update it without their knowledge. Any changes to reporting templates required for compliance with NESHAPs, including Subpart FFFFF, should be subject to notice and comment in the Federal Register. This is consistent with the requirements of the Clean Air Act and the Administrative Procedure Act (“APA”), which both mandate that notice of proposed rules be published in the Federal Register. EPA’s CEDRI website is not a sufficient substitute for notice in the Federal Register, and EPA should therefore publish notice of changes.

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162 Clean Air Act Section 307(d)(3) provides:

In the case of any rule to which this subsection applies, notice of proposed rulemaking shall be published in the Federal Register, as provided under section 553(b) of Title 5 [of the United States Code], shall be accompanied by a statement of its basis and purpose and shall specify the period available for public comment . . . .

42 U.S.C. § 7607(d)(3). The APA similarly states:

General notice of proposed [rulemaking] shall be published in the Federal Register, unless persons subject thereto are named and either personally served or otherwise have actual notice thereof in accordance with law.

. . .

Except when notice or hearing is required by statute, this subsection does not apply –
(A) to interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice; or
(B) when the agency for good cause finds (and incorporates the finding and a brief statement of reasons therefor in the rules issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest.

5 U.S.C. § 553(b). None of the exceptions set out in the APA apply in this case to any future changes in reporting templates.
to electronic reporting requirements in the Federal Register to afford companies subject to the Subpart FFFFF standards to review the proposed changes, comment as necessary, and implement compliance strategies to accommodate the changes. EPA’s alternative is not to require its use.

We have also reviewed both the proposed reporting regulatory language and the proposed compliance reporting template. Requiring use of the template is overly burdensome because facilities were already required to develop their own reports to comply with the existing MACT standards and developing new templates based on inefficient spreadsheets is not productive. Therefore, EPA should include an option in the final rule for facilities to comply with the reporting obligations by using their own equivalent format. Based on our review of the template, we identified a number of technical problems that should be corrected. In addition, the template suffers from the general defect of not being user friendly, with numerous formatting problems and a lack of clear instructions, as well as insufficient space to describe deviations or corrective actions when necessary. This is a legally relevant defect in that Section 113 of the Clean Air Act imposes criminal penalties for knowingly omitting material information from a required report and the reports at issue need to be certified for truth, accuracy, and completeness. This means that companies must be able to submit the amount of information they deem appropriate and this cannot be constrained by information technology limitations. The following specific technical corrections are needed for the proposed compliance reporting template:

- **Reporting Template General Concerns:**
  - In the regulatory language, newly proposed 40 C.F.R. § 63.7841(b)(9) requires that “any deviations from the requirements in §63.7791(a) and the corrective action taken” be reported. The proposed reporting template does not include anywhere how to report this deviation, with the citation, and provide information on the corrective action taken.
  - It is unclear whether all continuous parametric monitoring systems (“CPMS”) deviations are intended to be included as malfunctions.
  - It is unclear where to report deviations from operation and maintenance requirements in the template.
  - It is unclear whether there is an option of attaching documents to support the report.
  - It is unclear who must certify the submission, and whether the responsible officer that certifies other reporting forms must acquire access to CEDRI.
  - Dropdown menus in multiple tabs do not work correctly.

- **Tab “Company Information”:**
  - It is unclear what the “company record number” (column A) is and which “associated files” (column N) companies are expected to attach.

- **Tab “CPMS_Number_of_Deviation”:**
  - Column B, titled “Process Unit Description* (§63.8693(d)(9))”: This is an incorrect reference. Section 63.8693 is included in subpart LLLLLL which is the

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163. 42 U.S.C. § 7413(c)(2).
164. 40 C.F.R. §§ 63.9(h), 63.7841(b)(2).
MACT for Asphalt Processing and Asphalt Roofing Manufacturing. The correct reference is Section 63.7841(b)(8)(viii).

- All the columns are “autofilled”. However, we entered data in other tabs and no information autofilled on this tab.

- **Tab “CEM_COM_CPMS_Identification”:**
  - It is unclear what the “CPMS Certification / Audit” is (column D). Does it refer to when the device is calibrated, or to the performance evaluation that is in the existing Subpart FFFFFF standard?

- **Tab “CMS_Detail”:**
  - Columns E through H: The template requests information relating to starting and ending time and date for CPMS inoperative or out of control. The applicable General Provision for the rule is Section 63.10(c)(5) which requests “the date and time identifying each period during which the CMS was out of control, as defined in Section 63.8(c)(7)”. To be sure that all requirements are accurately mapped to the compliance template it is recommended that EPA include all applicable regulatory references (i.e., add the General Provision reference).

- **Tab “Limits_Details_w_CPMS”:**
  - The affected source dropdown menu references the CPMS tab, which appears to be an error unless this tab is intended to address EPS opacity only. It is unclear what tab will accommodate particulate matter and mercury reporting similar to this tab for opacity.

- **Tab “No_CPMS_Limits_Details”:**
  - Column B, titled “Affected Source* (§63.7841(b)(7)(ii))”: The more appropriate reference for affected source is Section 63.7841(b)(4). This issue is included in other tabs, also.
  - The column to report starting time of a deviation (column E) is formatted incorrectly.
  - The form requires an emission estimate which is inappropriate and overly burdensome and should be removed.

- **Tab ”No_CPMS_No_of_Deviations”:**
  - Three columns are “autofilled” and one has a dropdown box. However, we entered data in other tabs and no information autofilled nor is the dropdown box accessible in the template. All the lines in the tab were shaded red representing examples.

- **Tab ”CPMS_Detail”:**
  - The tab includes the requirement to provide information on the duration that a CPMS is either “inoperative” or “out-of-control”. However, while Section 63.7841(b)(8)(iii) requires reporting duration for out-of-control, Section 63.7841(b)(8)(ii) does not require reporting duration for inoperative CPMS. Practically speaking it’s an automatic calculation and EPA should establish consistent requirements for inoperative and out-of-control CPMS.
- Tab "Limits_Details_w_CPMS":
  - Column K titled “Actions Taken to Address Deviation* (§63.7841(b)(4)): This reference does not require reporting the action taken to address a deviation. It is not clear what the regulatory citation is to require this reporting element.

  EPA should correct each of these items in the proposed reporting template prior to publication of the final rule.

  VIII. The Proposed Compliance Dates Are Unreasonably Short and Must Be Extended to Allow Facilities Adequate Time to Comply.

  EPA proposes to require compliance with the proposed mercury standards within one year of publication of the final rule, and that all other amendments to the Subpart FFFFF standards will become effective 180 days after publication of the final rule. These proposed compliance dates are inadequate to allow facilities to undertake all the necessary planning and operational adjustments needed to ensure compliance with the Proposed Rule. As we strongly urge above, EPA should not proceed to finalize the proposed mercury provisions with this RTR rulemaking. If the agency proceeds to do so nonetheless, EPA must provide a three-year compliance period to allow facilities to comply. The proposed mercury requirement constitutes new standard setting under Clean Air Act Section 112(d)(2)-(3), and more time is required for facilities to ensure compliance. The remaining proposed amendments to the Subpart FFFFF standards will likewise require additional time for facilities to conform their existing practices. EPA should thus extend the proposed effective date of 180 days after promulgation of the final rule to one year after that date.

  IX. The Proposed Technical and Editorial Changes to the Subpart FFFFF Standards Are Reasonable Changes But Require Revision to Prevent Confusion for Compliance.

  EPA proposes to revise or add requirements in the Subpart FFFFF standards that include vague, redundant, or inconsistent language. To avoid potential confusion from these provisions, in addition to the other revisions to regulatory text suggested in other sections above, EPA needs to adopt the following corrections to its proposed regulatory language.

  - Proposed 40 C.F.R. § 63.7782(c). This proposed provision modifies the applicability of the rule to all of the blast furnace, whereas the existing Subpart FFFFF standards applies to the blast furnace causthouse. EPA does not propose any rule changes to include new limits or requirements that would require this modification to the rule’s applicability to include the entirety of the blast furnace. Thus, 40 C.F.R. § 63.7782(c) should be revised as follows:

165 84 Fed. Reg. at 42,739.
This subpart addresses emissions from the sinter plant windbox exhaust, discharge end, and sinter cooler; the blast furnace casthouse; and the BOPF shop including each individual BOPF and shop ancillary operations (hot metal transfer, hot metal desulfurization, slag skimming, and ladle metallurgy).

- **Proposed 40 C.F.R. § 63.7791.** EPA should add a letter identifier to the opening paragraph of the proposed provision. Referencing the regulatory text to satisfy recordkeeping and reporting requirements could be more difficult without a letter identifier.

- **Proposed 40 C.F.R. § 63.7800(a).** This provision will be duplicative because this rule was historically meant to reference the General Duty requirements from 40 C.F.R. § 63.6(e)(1)(i). In the Proposed Rule, however, the General Duty requirements would already be included under 40 C.F.R. § 63.7810(c). We recommend that 40 C.F.R. § 63.7800(a) be deleted from the final rule since it is duplicative of the new requirements in 40 C.F.R. § 63.7810(c).

- **Proposed 40 C.F.R. § 63.7800(b)(8).** This newly proposed provision references “compliance procedures” and “emissions calculations” in the operations and maintenance plan. “Compliance procedures” is not a defined term, however, and operation and maintenance plans do not contain specific “compliance procedures” or “emissions calculations.” Operation and maintenance plans include job specific procedures to aid facilities in maintaining compliance with this subpart. EPA should not adopt proposed 40 C.F.R. § 63.7800(b)(8) in the final rule.

- **Proposed 40 C.F.R. § 63.7810(c).** This proposed provision is inconsistent with similar provisions in other Section 112 standards. In particular, it should be revised to add the following sentence, consistent with similar standards:

> The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved.

This was an important aspect of revisions to the General Provisions made pursuant to litigation on that rule and there is no basis to exclude it from Subpart FFFFF.

- **Proposed 40 C.F.R. § 63.7840(f).** The proposal would require certifications in the notification of compliance status for the mercury steel scrap option requirements in 40 C.F.R. §§ 63.7791(a), (b), and (c). Accordingly, 40 C.F.R. § 63.7840(f) should be revised as follows:

> The notification of compliance status required by §63.9(h) must include each applicable certification of compliance, signed by a responsible official, in paragraphs (f)(1) and (2) of this section, regarding the mercury requirements in §63.7791(a), (b), and (c).
Proposed 40 C.F.R. § 63.7840(h). This proposed provision would require the results of each “performance evaluation” for each continuous monitoring system (“CMS) be submitted within 60 days. This requirement would include reporting of daily calibrations of COMS units, as they fall within the definition of “performance evaluation,” and thus would require facilities with COMS to submit daily reports. That is excessive. Facilities typically have several CMS, if not dozens of CMS, which are calibrated daily, quarterly, or semiannually and are often calibrated at different times and on different calendar days. The proposed language could thus be read to require up to several dozen reports, if not more, to be submitted per facility each year. Additionally, 40 C.F.R. § 63.7841(b)(8)(x) already requires the semiannual compliance report to include the date of the latest CMS certification or audit which is reported when a deviation occurs where a CMS is used to comply with an emission limit. Thus, the proposed 40 C.F.R. § 63.7840(h) should be deleted and not included in the final rule.

Proposed 40 C.F.R. §§ 63.7841(b)(9) and (10). These proposed provisions reference the NVMSRP requirements in proposed 40 C.F.R. § 63.7791(a). Thus, as written, the rule assumes that all facilities will choose to comply with the mercury requirements by complying with the NVMSRP requirements. This is not an appropriate assumption and should be corrected to reflect all of the proposed mercury compliance options. The rule should be revised as follows:

(9) Any deviation from the requirements in §63.7791(a) and the corrective action taken.
(10) If there were no deviations from the requirements in §63.7791(a), a statement that there were no deviations from the requirements during the reporting period.

Proposed 40 C.F.R. § 63.7843(d). The proposed provision states that “any records required to be maintained by this part that are submitted electronically via EPA’s CEDRI may be maintained in electronic format.” This implies that only records submitted electronically through CEDRI can be maintained in an electronic format. However, 40 C.F.R. § 63.10(b)(1), which is applicable to Subpart FFFFF, already allows for records to be kept in electronic format. Thus, the proposed 40 C.F.R. § 63.7843(d) should be deleted and not included in the final rule.

X. Neither the Materials Added to the Docket After the Initial Comment Period Closed Nor the Comments Opposing the Proposed Rule Provide a Basis to Revise the II&S NESHAP.

A. Commenters opposing EPA’s proposed findings of low risk and conclusion that the Subpart FFFFF standards do not require revision fail at their attempt to cast doubt on the regulatory process here.

AISI/USS, in addition to offering the specific comments below, commend EPA for its commitment to the administrative process and efforts to undertake informed, responsible rulemaking. We note that some commenters are criticizing EPA for gathering information from
the industry to ensure that inputs to the risk modeling were accurate and reflective of operations. The process that EPA undertook in this rulemaking is no different than has been the process since the RTR process began in the early 2000s. And the U.S. Court of Appeals for the D.C. Circuit has recognized the voluntary provision of information as a legitimate means of compiling the data needed to conduct a risk assessment:

Petitioners contend that EPA’s risk analysis was flawed because the agency did not exercise its authority under [section 114]; instead, EPA relied upon data voluntarily supplied by the industry. But section 114 is not a mandatory provision—it only states that EPA “may” require sources to supply data. This wording gives the Administrator discretion to decide what types of data should be used for a risk assessment. Indeed, EPA has explained that relying on data from industry sources is a well-established practice. In its 1999 report to Congress on how the agency planned to address residual risks, EPA stated that “source and emissions data can be derived from broad-scale emissions inventories, specific data collection efforts with particular industries, or information from regional, State, or local air toxics agencies.” Residual Risk Report to Congress (Mar. 1999), at 35 (emphasis added).

As EPA’s counsel explained at oral argument, it is very costly and time-consuming for both the agency and the emissions sources to issue information requests under section 114. Tr. of Oral Arg., at 21-22. It was therefore not unreasonable for the agency to decline to invoke its section 114 authority when more efficient data-collection methods were available.166

Here, EPA followed the established process of compiling data from databases and state sources and then verifying information with the facilities that were the subject of such inquiry. There is nothing improper about verifying the inputs to the risk model. Indeed, it is the essence of EPA’s responsibility, for if it did not do so, EPA’s final action would be subject to potential challenge for proceeding based on inaccurate data. Further, as the court has recognized, the most efficient way for EPA to determine if it is modeling risk properly is to verify the inputs—as it did here. Running the EPA models is a costly endeavor and EPA’s desire to ensure that its model runs are as accurate as possible from the outset should be commended, not criticized. In short, there is nothing unusual about the process for developing this RTR.

To the extent that those commenters dispute EPA’s findings of low, acceptable risk, their comments should be directed at the substantive elements of the rule and not attempt to criticize EPA’s desire to obtain accurate inputs through an informal information collection process. To summarize the process here, the record shows that in 2011, EPA began preparations for this rulemaking by issuing an Information Collection Request (ICR) under Clean Air Act Section 114 to facilities subject to the Subpart FFFFT standards, as it is empowered to do and has done in numerous other rulemakings.167 Facilities in the integrated iron and steel manufacturing source category undertook significant testing and data gathering and supplied the results to EPA in response to the ICR in 2012. Thereafter, facilities reviewed data made publicly available on EPA’s

website and offered corrections to ensure that EPA’s dataset and modeling accurately reflected source emissions and used assumptions appropriate for the characteristics of the facilities. EPA can and should leverage facilities’ immense knowledge of their own sources to promulgate the most well-informed regulations possible. Facilities are best positioned to identify and correct errors in data and understand whether modeling assumptions are appropriate for a given source. It would behoove no one to deprive agencies of the opportunity to take advantage of the knowledge and expertise of the industries they regulate. This is particularly true in areas as complex as regulating air emissions. EPA is obligated to diligently record and make publicly available any information on which it relies; it did so here.

The process described above, which is entirely appropriate and consistent with typical agency practice, in no way precluded other interested parties from engaging with EPA. Anyone could have requested meetings with or submitted information to EPA during the development of the Proposed Rule. Moreover, any suggestion that these commenters were unaware of the ongoing development of the Proposed Rule is belied by their own conduct. In fact, EPA’s timing for issuing the Proposed Rule was driven by a court ordered deadline to publish a final rule completing the RTR process in 2020, which was triggered by a lawsuit brought against the agency by signed parties of the comments at issue here. Accordingly, commenters clearly were on notice that EPA was in the process of developing a Proposed Rule and could have sought to engage in the rulemaking development if they had so chosen.

Finally, commenters’ suggestions that EPA should discount the information presented by AISI/USS simply because it differs from some of EPA’s original data and assumptions evidences a fundamental misunderstanding of the modeling process central to RTR rulemakings. For instance, commenters persistently conflate the notion of emissions inputs and modeled results. More egregiously, however, commenters have asserted that the modeling inputs that AISI previously submitted to EPA and which are in the docket must be incorrect because they do not achieve the same ultimate modeling results as reflected in EPA’s proposed residual risk assessment. Commenters apparently fail to recognize that this is precisely the point: a corrected input-run model should demonstrably not reach results identical to EPA’s prior runs if those prior runs relied on inaccurate data, incorrect assumptions, and flawed methodologies.

B. **The supplemental materials added to the docket are irrelevant to the appropriate inquiry in an RTR rulemaking and do not support alteration of the Subpart FFFFFF standards.**

After the close of the initial comment period on September 30, 2019, EPA added materials to the rulemaking docket. Many of these materials consist of photographs of “UFIP” or unmeasurable fugitive intermittent particulate emissions sources and compliance and enforcement documents related to various facilities in the II&S source category, which are owned or operated by AISI member companies or USS.
Some of the documents added to the docket are photographs purporting to depict UFIP sources at II&S facilities.168 These photographs are of varying degrees of quality (some are particularly unclear, such as the photograph labeled as beaching) and, for the most part, are posted in the docket devoid of any context and fail to identify the facility at which they were taken, the date and circumstances under which they were taken, and by whom they were taken. It is thus not possible to confirm that these are in fact photographs at sources in the II&S source category, or even at facilities within the United States. Further, given the lack of detail and background provided, it is inappropriate even to imply that these photographs are representative of UFIP sources under normal operating conditions. Even if photographs could be established as correctly depicting a particular source that is in the II&S category, that does not establish whether or not a revision to the NESHAP is needed. For example, those conditions may well have represented a violation of the NESHAP or of another Clean Air Act requirement. In such a case, the solution would not be to establish more regulatory requirements but rather would be to enforce the requirements on the books already. Regardless, the photos at most would represent a moment in time and in no way establish emission levels and thus are not relevant to this rulemaking. Indeed, this is one of the reasons that the opacity limits applicable to both blast furnace casthouses and BOPF shops incorporate averaging periods. The precise regulatory purpose for which EPA could rely on the photographs placed in the docket of various UFIP sources in the docket is unclear. Simply capturing a visual image of one instant of operations at a plant simply cannot provide a basis for regulation.

Where date information of the photographs was provided, AISI members and U. S. Steel were able to identify some of the photograph locations and correlate photograph dates to operations records at their facilities, the photograph information appears to be inaccurate. For example, in one instance, the photograph, which is labeled as showing a planned blast furnace opening,169 did not actually depict that event but was actually associated with an unplanned bleeder opening.170 Other photographs correctly identify the UFIP source they depict, but are nonetheless unrepresentative because they do not show the source during normal operations, which is the state relevant to determine if additional controls/limits are appropriate. For instance, a photograph of blast furnace bell leaks was taken from an August 2008 inspection report from Facility No. 26163110000497141, and does not depict typical operation of the source.171

168 See EPA-HQ-OAR-2002-0083-0982 (slag pit); EPA-HQ-OAR-2002-0083-0979 (blast furnace bell leak); EPA-HQ-OAR-2002-0083-0980 (blast furnace planned opening); EPA-HQ-OAR-2002-0083-0978 (beaching); and EPA-HQ-OAR-2002-0083-0981 (basic oxygen furnace shop).
169 EPA-HQ-OAR-2002-0083-0980.
170 The photograph is from Facility No. 18127110000607558. The emergency gas bleeder safety valve opening on June 12, 2017, the date of the photograph in the docket, occurred due to the unplanned over-pressurization at Blast Furnace C that resulted from the loss of Turbo Blower No. 3, which provides wind to the furnace. Turbo Blower No. 2 was brought online to supply the proper wind needed for safe operation and allowed normal operations to resume. The photograph in the docket thus shows an example of an unplanned blast furnace opening, rather than a planned opening as EPA claims.
171 EPA-HQ-OAR-2002-0083-0979.
photographs of basic oxygen furnace shops, likewise, is not representative of normal operations at the source.\footnote{EPA-HQ-OAR-2002-0083-0981. The top photograph is from Facility No. 39017110000392557. The photograph does not show normal operations at the basic oxygen furnace shop. Potentially noncompliant emissions at the basic oxygen furnace shop were recently addressed in an administrative order.}

Many of the other added documents are inspection reports or other enforcement-related documents from the facilities in the II&S source category. Given the enforcement-based nature of these documents, they are not indicative of normal operations at II&S facilities and therefore are not appropriate for establishing regulatory requirements. Indeed, several of the documents included in the docket are enforcement documents related to violations of the Subpart FFFFF standards, which were subsequently resolved through consent decrees and other mechanisms. Indications of Subpart FFFFF violations does not establish a need to change the standard to make it more stringent. Indeed, it may indicate that the standard was set too stringent for sources to achieve compliance. Further, some of the documents posted to the docket include information that AISI members and U. S. Steel disputed factually, but the docket does not reflect those disagreements.

For purposes of RTR rulemaking, evidence of violations of the existing NESHAP standards is irrelevant. The inquiry at hand in the residual risk assessment is identifying whether sources operating in compliance with the current standards pose an unacceptable risk and whether the standards already in place provide an ample margin of safety. Thus, EPA’s focus in conducting the RTR rulemaking for the II&S source category has been and should be on evaluating sources subject to and complying with the Subpart FFFFF standards. The enforcement documents recently added to the docket, therefore, should not be considered in this RTR rulemaking.

\textbf{XI. Conclusion}

AISI and U. S. Steel would be pleased to answer any questions regarding these comments and urges the agency to implement the recommendations in any final action.