Coalition for Responsible Waste Incineration

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December 26, 2025

U. S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
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Attn: Docket ID No. EPA-HQ-OAR-2004-0022

The Coalition for Responsible Waste Incineration (CRWI) appreciates the opportunity to submit comments on the *National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors: Residual Risk and Technology Review; Withdrawal of Proposed Revisions to Standards for Periods of Malfunction*: Proposed rule and withdrawal of proposed rule. 90 FR 50,814 (November 10, 2025). CRWI is a trade association comprised of 28 members representing companies that own and operate hazardous waste combustors and companies that provide equipment and services to the combustion industry.

CRWI's specific comments are attached.

Thank you for the opportunity to submit these comments. If you have any questions, please contact me at (703-431-7343 or mel@crwi.org).

Sincerely yours,

Melvin E. Keener, Ph.D.
Executive Director

cc: R. Smoak, EPA

Contents

C-1. Setting the HF and HCN standards pursuant to CAA section 112(d)(6) rather than setting the HF and HCN standards exclusively pursuant to CAA sections 112(d)(2), (d)(3), and (h)(2), as discussed in section IV.A of this preamble.

EPA argues that the *LEAN* opinion requires it to address in this Section 112(d)(6) rulemaking hazardous air pollutants (HAPs) that were not regulated by the original HWC MACT standards. EPA proposes standards for HF and HCN under Sections 112(d)(2), (d)(3) and (h)(2). EPA asks for comment on whether it should set those standards **not** under those provisions, but **rather under Section 112(d)(6)**. National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors: Residual Risk and Technology Review; Withdrawal of Proposed Revisions to Standards for Periods of Malfunction, 90 Fed. Reg. 50814, 50833 (Nov. 10, 2025). CRWI believes that the best reading of Section 112 is that EPA should set any standards in a Section 112(d)(6) technology rulemaking under Section 112(d)(6), not 112 (d)(2) and(d)(3). That is because while the D.C. Circuit in *LEAN* addressed *whether* EPA is required to address previously unregulated HAPs (i.e., gap fill) in a Section 112(d)(6) rulemaking, the court did not address *how* such regulation should be conducted. The D.C. Circuit has held that if EPA determines that revision of an existing standard is "necessary" under Section 112(d)(6), EPA is not required to establish that standard pursuant to Section 112(d)(2) and(d)(3).[1] It follows then that if a revision to an existing standard is deemed "necessary" under Section 112(d)(6) then that revision logically should be analyzed under that same provision. Nothing in the text of Section 112(d)(6) indicates that EPA can or should revert to Sections 112(d)(2) and (d)(3) when the legal impetus for a standard is a

[1] In *NRDC v. EPA*, 529 F.3d 1977, 1084 (D.C.Cir. 2008), NGOs argued that EPA must completely recalculate MACT technology in a Section 112(d)(6) rulemaking. *Id.* The court rejected that argument, holding that "We do not think the words "review and revise as necessary" can be construed reasonable as imposing such an obligation." *Id.*

finding under Section 112(d)(6) that it is "necessary." As EPA noted in the proposal, Section 112(d)(6) does not impose a mandatory minimum level of stringency and allows EPA to consider costs in setting its Section 112(d)(6) standards.

C-4. The establishment of an HBEL for HAP, including HF and HCN, as discussed in section IV.A.1. of this preamble.

In the preamble, the Agency solicits comments on whether it should develop health-based emission limits (HBEL) for hydrogen fluoride (HF) and hydrogen cyanide (HCN) for the solid fuel boiler source category.[2] CRWI believes that EPA has the authority to do this and we believe they should. We also believe the Agency should include this option for HCN emissions for the liquid fired boiler source category.

Section 112(d)(4) of the Clean Air Act allows the Agency set risk-based standards in lieu of the technology-based standards. The statutory language is below.

> "With respect to pollutants for which a health threshold has been established, the Administrator may consider such threshold level, with an ample margin of safety, when establishing emission standards under this subsection."

There are two requirements the Agency must satisfy before they can use this section in lieu of technology standards under sections 112(d)(2) and (3). The first is that the pollutant in question has to be a threshold pollutant and the second is that any emission limit developed must provide an ample margin of safety. The statute does not define a threshold pollutant but the legislative history of the Clean Air Act Amendments of 1990 gives some clues. The following discussion is included in the Senate Report to the final rule.

> [T]he Administrator is given discretionary authority to consider the evidence for a health threshold higher than MACT at the time the standard is under review. The Administrator is not required to take such factors into account; that would jeopardize the standard-setting schedule imposed under this section with the kind of lengthy study and debate that has crippled the current program. But where health thresholds are well established, for instance in the case of **ammonia**, and the pollutant presents no risk of other adverse health effects, including cancer, for which no threshold can be established, the Administrator may use the threshold with an ample margin of safety (and not considering cost) to set emissions limitations for sources in the category or subcategory. Employing a health threshold or safety level rather than the MACT criteria to set standards shall not result in adverse environmental effects which would otherwise be reduced or eliminated.

[2] 90 FR 50,833.

S. Rep. No. 228, 101st Cong. Sess. 171 (1990). *See also* S. Rep. No. 228, 101st Cong. Sess. 175-176 (1989) (emphasis added) (Administrator authorized to use threshold level "in lieu of more stringent 'best technology' requirements.")

Here, the discussion pointed to ammonia as an example of a "threshold pollutant."

As EPA noted in 1997,

> "A threshold pollutant is one considered to have a concentration below which adverse effects are not expected to occur over a lifetime of exposure. For section 112(d)(4) to apply, the determination of a reference concentration (RfC) or reference dose (RfD) for a pollutant is sufficient to show that a threshold exists and may be sufficient to be considered the ample margin of safety level. When an RfC/RfD does not exist, a determination that a threshold exists would have to be made based upon the availability of specific data on a pollutant's mechanism of action."[3]

Table 1 of Appendix 8 for the Residual Risk Assessment for the Hazardous Waste Combustors Source Category in Support of the 2025 Risk and Technology Review Proposed Rule lists the chronic cancer and noncancer inhalation and oral dose-response values and the source of those values. [4] The only values listed in this table for HF and HCN are inhalation reference concentrations. There are no unit risk estimates, cancer slope factors, or reference doses. The source for the HF reference exposure limits (REL) is the California EPA Office of Environmental Human Health Assessment and the source for HCN RfC is the EPA's Integrated Risk Information System (IRIS).

The IRIS database for ammonia shows a RfC with a medium confidence level. It also states that ammonia has not been assessed under the IRIS program for cancer risk. The IRIS database for HCN shows a RfC with a low/medium confidence level with the same designation as ammonia for cancer risk. The IRIS database has not developed any toxicity information on HF. However, the California EPA has. Again, comparing HF to ammonia, California EPA shows an inhalation reference exposure level (REL, comparable to the RfC under IRIS) with no discussion of any carcinogenic impacts of ammonia. For HF, California EPA shows an inhalation reference exposure level with no discussion about potential cancer impacts.[5]

Based on this information, the toxicity of ammonia, HF, and HCN appear similar. All have RfC (or REL) with no discussion of any cancer impacts. As such, CRWI would

[3] 62 FR 33,631. June 20, 1997.
[4] Docket ID No. EPA-HQ-OAR-2004-0022-0723, at PDF page 1142 of 1489.
[5] https://oehha.ca.gov/sites/default/files/media/downloads/crnr/appendixd3final.pdf, ammonia – page 19, HF – page 270.

argue that both HF and HCN are threshold pollutants. EPA should consider setting health-based emission limits for both.

The second part of the determination is to develop an ample margin of safety. Here CRWI would point the Agency to their risk assessment for this proposed rule. Using the HF and HCN data in Table 5 of Appendix 10 of the risk assessment document in the docket, CRWI calculated the mean, maximum, and minimum Hazard Quotient (HQ) for HF and HCN. Those results are shown in the following table.

		REL	AEGL1	AEGL2	ERPG1	ERPG2
HF	Mean	0.00192	0.00059	0.00002	0.00030	0.00003
	Maximum	0.02000	0.00700	0.00030	0.00400	0.00040
	Minimum	0.00005	0.00002	0.00000	0.00001	0.00000
HCN	Mean	0.00875	0.00143	0.00039		0.00029
	Maximum	0.20000	0.03000	0.00800		0.00600
	Minimum	0.00003	0.00000	0.00000		0.00000

The maximum HQ for HF and HCN were 0.02 and 0.2, respectively. Based on EPA's data, a health-based emission limit for HF could be up to 50 times higher than the Agency used during the risk assessment calculation and the HCN limit up to 5 times higher before the HQ would reach 1 (the Agency's threshold for a health impact). It is also worthwhile to note that the range of HQ for both are very wide and the mean is 0.002 and 0.009 for HF and HCN, respectively. Let us be clear, CRWI is not advocating at this time for setting numerical emission for either based on this analysis. Should the Agency decide to pursue health-based emission limits for HF and HCN in the future, additional analysis will be needed. The wide range of HQs found in EPA's current risk assessment would indicate that a requirement similar to what is currently found in 40 CFR 63.1215 would be more appropriate than a single health-based emissions limit for all.

C-6. The appropriateness of the proposed work practice standard for the control of HF emissions, and whether additional work practice standards should be included, as discussed in section IV.A.2.a. of this preamble.

Work practices.

In general, CRWI supports the work practice standards for the control of HF emission limits. We have a few suggestions that may make the implementation of this work practice more practical.

EPA has proposed to allow the use of three options for the work practice:

1. Active control of hydrogen chloride (HCl) emissions including two interlocked automatic waste feed cut off (AWFCO) operating parameter limits (OPL);
2. Certification that the facility does not feed fluorine; or

3. An MTEC approach if the facility feeds some levels of fluorine but does not have an active acid gas control system in place.

Although Option #1 will work in most circumstances, CRWI has concerns about requiring two interlocked AWFCOs. CRWI is aware of at least one hazardous waste incinerator that uses an HCl continuous emission monitors (CEM) as a direct measure of emissions. They do not use OPLs for this HAP, The CEMs is their control device, which is interlocked with the AWFCO system. Given the two interlocked AWFCO requirement, this facility would not be able to use Option #1 because they do not have two OPLs tied to the AWFCO system for HCl. In reality, failure of any OPL or CEMs will trigger an AWFCO. As such, a single AWFCO will meet EPA's goal of waste feed shut off. Conversely, facilities that do not have CEMs will often have multiple OPLs relating to acid gas controls that are tied into the AWFCO system. An exceedance on any one will shut off waste. Having a second OPL trip will not add conservatism to the requirement. Given this logic, CRWI suggests the Agency modify the regulatory language in 63.1209(s)(1)(i) to require one AWFCO interlock. Further, CRWI believes Options #2 and #3 are reasonable for facilities without an active acid gas control systems in place.

Typographical correction.

CRWI suspects the Agency has already figured out there is a typo (AQFCO instead of AWFCO) in the proposed regulatory language for 63.1209(s)(1)(i)) but wanted to make sure it was correct in the final rule.

HF work practice for other source categories.

CRWI is unclear on why the Agency chose to set HF numerical emission limits for the solid fuel boiler source category and not a work practice standard as it did for other source categories. The fundamental principles for the three options are valid for this source category as well. CRWI suggests giving the facilities in this source category the same three options as the rest of the source categories.

Technical support for using HCl as a work practice for HF.

In the preamble (50836), the Agency states:

> For the Option 1 work practice, all utilized controls of HCl emissions except chlorine feed rate control also control HF, as both are acid gases with similar chemistry in APCDs; these APCDs are equally or more effective at controlling HF than HCl. Because HCl, and by extension HF, is already controlled, no further control requirements are necessary.

CRWI agrees with this statement and offers the following technical information to support that statement.

Both HCl and HF are acid gases generated in the combustion of hazardous waste containing chlorine and fluorine. Both acids gases are effectively controlled by wet or dry scrubbers. Theoretical principles, field data, and EPA regulatory precedent all support the use of HCl control as a work practice. Further, the measurement of hydrogen chloride yields more accurate information about the performance of control devices. EPA Method 26 and 26A[6], the methods used to measure halogen emissions, has been extensively tested and studied for HCl, but less so for HF. Additionally, hazardous waste combustors process approximately 50 times more chlorines than fluorines. Treatment of hydrochloric acid to meet current emission standards leads to non-detectable measurements of HF.

Hydrogen Chloride and Hydrogen Fluoride Control for Hazardous Waste Combustors.

Hazardous waste combustors employ wet scrubbers, dry scrubbers, or a combination of both, to meet existing HCl and chlorine (Cl_2) emission requirements. EPA defines gas absorbers as either “wet” or “dry” scrubbers depending on the physical state of the sorbent. In a wet scrubber, the sorbent is injected into the waste gas stream as an aqueous solution and the pollutants dissolve in the aqueous droplets and/or react with the sorbent. Dry scrubbers inject either dry, powdered sorbent or an aqueous slurry that contains a high concentration of the sorbent. In the latter case, the water evaporates in the high temperature of the flue gas, leaving solid sorbent particles that react with the acid gases. Both wet and dry scrubbing systems effectively remove these acid gases through similar mechanisms (Sorrels, et al., 2021). Below is a brief review of each type of system, its theoretical performance for both HCl and HF control, and field data supporting the theoretical performance.

Wet Scrubbing Systems

Wet scrubbers remove acid gases by absorption into water. In most cases, an alkaline reagent is added into the water to neutralize the acid. Examples of wet scrubbers include spray towers, packed beds, plate towers, wet cyclones, and venturi scrubbers.

Theoretical Performance

The theoretical performance of wet scrubbers for the removal of HCl and HF is determined by three main factors:

- Gas-phase resistance: the device’s ability to promote diffusion of the acidic gas to the liquid surface.
- Gas-liquid equilibrium: defined by the Henry’s Law constant.

[6] Both methods can be found in 40 CFR 60, Appendix A-8.

- Liquid-phase resistance: the device's ability to diffuse the acid gas away from the liquid surface or promote reactions that reduce its influence at the gas-liquid interface (Barbour, et al., 1995).

For both HCl and HF, the properties governing the gas-phase resistance – gas density, viscosity, and diffusivity – are similar. However, the smaller molecular size of HF improves its diffusivity, allowing it to diffuse slightly faster to the absorbent or adsorbent surface. While overall capture depends on the design of the control device, HF should theoretically be captured more efficiently than HCl.

Henry's Law constant defines the gas-liquid equilibrium. A higher constant implies greater absorption. The constant for HF is nearly an order of magnitude greater than that for HCl (Sanders, 2015), showing that HF absorbs more rapidly and thoroughly than HCl.

Liquid-phase reactions involving both acids minimize further liquid-phase resistance. HF disassociates and hydrolyzes readily in water, instantly reducing its gas concentration at the interface. It also reacts with alkalis such as sodium and calcium to form stable salts. Likewise, HCl disassociates in water and reacts with alkalis. For either acid, liquid-phase resistance is minimal and insignificant.

Summarizing, HF diffuses more effectively and reacts faster than HCl. Therefore, the theoretical performance of wet scrubbers for HF should meet or exceed that for HCl.

Field Data

EPA conducted Hazardous Air Pollutant (HAP) emissions testing at its pilot-scale combustion research facility to develop data on the relationship between the two pollutants. EPA determined that wet flue gas desulfurization (FGD) systems achieve greater than 97% control of HCl and greater than 96% control of HF.

In pilot scale tests using EPA Method 26A, removal efficiencies were 99.8% for HCl. For HF, detection limit issues were encountered, and results were reported only as greater than 91.8%. The researchers noted this issue, stating "these control efficiencies were likely much higher than the reported values because the outlet measurements were below the detection limits for both HF and Cl_2" (Hutson, 2023).

Han et. al. (2007) studied HCl and HF capture in a packed bed scrubber. Their results show, in a variety of conditions and packing types, HF absorbs into water more efficiently than HCl.

Dry Scrubbing Systems

Dry systems remove acid gases either by absorption or adsorption onto an alkaline sorbent, followed by a particulate capture device to remove the neutralized acid and sorbent from the gas stream. The two most common dry scrubbers are spray dryer absorbers and dry sorbent injection. Spray dry absorbers inject a slurry to both cool the flue gas and absorb acids. Dry sorbent injection introduces dry alkaline sorbents, which adsorb the acid gases onto their surface, followed by chemical reactions that convert the acids to stable salts. Both technologies ultimately convert the acid gases into dry, neutralized salts.

Theoretical Performance

The theoretical performance of dry scrubbers for the removal of hydrogen chloride or hydrogen fluoride is driven by:

- Gas-phase resistance: the device's ability to promote diffusion of the acidic gas to the liquid or solid surface; and
- Gas-liquid or gas-solid equilibrium: for slurries, defined by the Henry's Law constant; for solids, dependent on reaction kinetics.

As discussed above, HF is slightly smaller and diffuses faster than HCl. For slurry-based systems governed by Henry's Law, the constant for HF is nearly an order of magnitude higher than for HCl, meaning HF capture occurs faster and more completely.

Although performance can vary depending on the specific design, operation, and reagent of a dry scrubber, removal efficiencies for HCl and HF are predictable, consistent, and well documented (Wysocki and Szymanek, 2022; Kong and Wood, 2011).

Measurement of HCl and HF by Method 26/26A

EPA Methods 26 and 26A were originally developed to measure HCl and Cl_2 emissions under the Resource Conservation and Recovery Act for permitting of hazardous waste combustors and municipal incinerators (Steinberger and Margeson, 1989). The methodology has been well tested for collection of HCl at concentrations up to 500 ppm and as low as a few ppm. While some studies have demonstrated favorable results for measuring HF, the method has not been extensively evaluated, and limited data show mixed performance (Johnson 1996).

EPA publishes procedures and recommendations for both methods. For HF, the Agency has documented positively biased results caused by outgassing from Teflon

tubes, an issue noted in both procedures[7]. Further, because the method has not undergone extensive testing for HF, EPA does not provide guidance regarding its applicable concentration range for HF[8,9].

A review of hazardous waste combustor data submitted between 2020 through 2023 indicates that fluorine-bearing waste represents only a minor fraction of industry throughput compared to chlorine-bearing wastes. Combusted wastes contained 50 times more chlorine than fluorine. Systems designed to comply with existing HCl emission standards are therefore more likely to produce very low HF emissions that potentially fall below detection limits. Indeed, EPA has detection-limit issues even for HCl emissions in other industries, such as Portland Cement Manufacturing.

Publicly available stack tests reporting both HCl and HF emissions using Methods 26 or 26A consistently show HF emissions below the detection limit. For example, testing at Southeastern Public Service Authority Units No. 1 and No. 3, which employ a spray dry absorber and fabric filter baghouse, reported detectable HCl emissions of 14.3 ppmvd at 7% oxygen, and HF emissions of less than 3.01 ppmvd at 7% oxygen. However, all three HF tests fell below the method detectable limit, meaning the reported HF values are biased high (Kunstling, 2003).

Arcadis performed similar testing for the EPA using a wet scrubber. It reported:

> "Emissions of halide HAPs were quantified at the scrubber inlet sampling location for tests performed April 7, 2010, and July 16, 2010. Emissions at the scrubber outlet were quantified for HCl for both tests; the concentration of HF and Cl_2 were too low to quantify with the procedures used. Control of HCl was 99.9 percent for both test days. The control of HF was greater than 92 percent for the first test and greater than 76 percent for the second test. The control of Cl_2 was greater than 76 percent for the first test and greater than 92 percent for the second test. These control efficiencies were likely much higher than the reported values because the outlet measurements were below the detection limits for both HF and Cl_2. The control efficiencies were calculated using the detection limit value.) The scrubber was designed and operated to provide approximately 98 percent SO2 removal." (Singer, 2011)

Conclusions

CRWI supports the use of HCl control as a work practice for HF for the following reasons. First, a properly designed and operated wet or dry air pollution control system will remove both HCl and HF similarly and effectively. Wet scrubbers and dry scrubbers have long been used for acid gas control. According to EPA's *Air*

[7] https://www.epa.gov/sites/default/files/2020-08/documents/gd-034.pdf, accessed September 17, 2025.
[8] https://www.epa.gov/sites/default/files/2016-08/documents/method26_faq.pdf, accessed September 17, 2025.
[9] https://www.epa.gov/sites/default/files/2016-08/documents/method26a_faq.pdf, accessed September 17, 2025.

Pollution Control Cost Manual, both wet and dry scrubbers achieve "high removal efficiencies for acid gases (e.g., HCl, HF, H_2SO_4) in industrial waste streams" (Sorrels, et al., 2021).

Second, measurement techniques for HCl are more robust than for HF. EPA Methods 26 and 26A, originally developed for HCl and Cl_2, are widely used to assess emissions of both acids. While the methods have been adapted for HF, guidelines and validation for HF remain less developed than for HCl.

Third, the hazardous waste combustor industry treats approximately 50 times more chlorine-bearing waste than fluorine-bearing waste. Recent stack tests reports show HF emissions as non-detectable when measured alongside HCl.

In conclusion, CRWI supports the use of HCl control as a work practice for HF and urges EPA and the other regulatory agencies to maintain this approach in future rulemaking and permitting decisions.

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C-11. Whether and how we should establish regulations within this and other New Source Performance Standards or NESHAPs in response to the D.C. Circuit's SSM Litigation Group decision, as described in section IV.E.1. of this preamble.

In the preamble, the Agency requests comments on whether future rulemakings for this source category or other NESHAPs should contain an affirmative defense provision.[10] CRWI believes they should.

In 1992,[11] EPA established an affirmative defense for a narrow set of circumstances where a stationary source exceeded its emission limits due to an emergency event.[12] In 1996,[13] this was extended to federally issued permits.[14] As promulgated in 1992 and 1996, the regulations provided for a defense against penalties when a source's violation of emission standards was due to a sudden, unforeseeable event beyond its control, such as a malfunction or "emergency." To successfully use an affirmative defense, a party was required to demonstrate all of the following:

- The exceedance was caused by an "emergency" as defined by the regulation;
- The facility was being operated properly at the time;
- All reasonable steps were taken to minimize emissions; and
- The permitting authority was notified in a timely manner, often within two working days.

[10] 90 FR 50,847.
[11] 57 FR 32,250, 32,306.
[12] 40 CFR 70.6(g).
[13] 61 FR 34,202, 34,239.
[14] 40 CFR 71.6(g).

In the preamble of the 1992 rule, EPA stated

> "EPA believes that the emergency provision of § 70.6(g) is appropriate in order to provide permitted sources with an affirmative defense where an enforcement action is brought for exceedances of technology-based standards due solely to the unforeseeable failure of technology." [15]

On July 21, 2023, EPA removed §§ 40 CFR 70.6(g) and 71.6(g) based on the 2014 NRDC decision (*NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014). In the *SSM Litigation Group v. EPA,* Case No. 23–1267 decision, the same court concluded that the *NRDC* decision was correct in denying EPA the ability to modify civil penalties, but the court also concluded that EPA had improperly read *NRDC* to require the removal of all affirmative defense provisions. Instead, this court held that an affirmative defense is permitted under the Clean Air Act stating "we now hold that a complete affirmative defense to liability does not render an emission limitation non-continuous under 42 U.S.C. § 7602(k)." (page 13 of the opinion).

In 1992, EPA recognized that technologies fail and some provisions should be made for when those technologies fail due to circumstances beyond the control of the facility. Based on an interpretation of the 2014 *NRDC* opinion, EPA has been removing affirmative defense provisions, but the SSM Litigation Group decision has clarified that EPA can include an affirmative defense. Based on the latest decision, CRWI suggests that the Agency add an affirmative defense provision in the final rule.

C-12. The content, layout, and overall design of the electronic reporting templates as discussed in section IV.E.2. of this preamble.

EPA asked for comments on the two electronic reporting templates in the docket. CRWI members have identified the following issues with the one of spreadsheets in the docket.

The template for a Notice of Compliance (NOC) appears to be similar to the templates utilized for other MACT regulations. CRWI does not have any comments on this template at this time.

The other template is for excessive emissions. In the CMS_Downtime Tab, the drop-down list for Continuous Monitoring System does not seem to be working. This same issue is present on the CMS_Deviation tab. It may be that this is something that should be pulled from the hidden lists tab, as it says this column will autopopulate. This also occurs on the CMS_Downtime Summary and CMS_Deviation Summary Tabs. If the Agency wants facilities to populate that list tab (which you can only find if you unhide it) then that needs to be identified in the

[15] 57 FR 32,279.

instructions/welcome tab. The workbook also appears to be missing the Company Information tab.

In addition, the excess emissions template has entries for both the Excess Emissions and CMS Performance Report and the Summary Report. This covers everything in the current reporting requirement but it is complicated by proposing to add 63.1211(a)(1). It is unclear if this will require reporting all instances where a source failed to meet a standard or only the ones that were not malfunctions. Also, the report template is missing the Summary Report only option in 63.10 (e)(3)(vii), which states that you can submit only the Summary Report if the exceedances are less than 1% than the total operating hours. Finally, it is not clear that if the facility only has to submit the Summary Report, does the facility still have to address the 63.1211 (a) (1) requirement. CRWI requests that the instructions be included to answer these questions.

It is likely that additional issues will be identified once facilities start to use them. CRWI suggests that the Agency allow for this by setting up a phase in period. This will allow time for initial issues to be resolved. CRWI members will work with the Agency to help resolve any issues identified.

C-14. The technical revisions discussed in section IV.E.10. of this preamble.

Removing the requirement that CO is kept between the average and maximum reported values during the CfPT;

EPA is proposing to remove the CO/THC range requirements in 40 CFR 63.1207(g)(2) because CO and THC are not tunable parameters. CRWI agrees. The language in the redline/strikeout regulatory language adequately does this. No additional changes are needed.

Explicitly allowing incorporation by reference of operating parameter limits determined during the CPT into title V permits;

The Agency is correct that the current regulations are silent on how revised operating limits are incorporated into existing Title V permits. A number of CRWI members have already included language in their Title V permits that any new operating parameter limits are automatically incorporated when their Notice of Compliance is submitted to the permitting authority. CRWI supports the Agency's clarification that operating parameter requirements may be incorporated in the Title V or other air permit either directly or by reference.

Clarifying that a relative accuracy test audit (RATA) must be performed within 60 days of every Comprehensive Performance Test CPT;

EPA is proposing to clarify that a RATA must be performed within 60 days of the start of every CPT. In most cases, this will work. However, there are others when it will not. For example, it is not uncommon to complete the RATA, come on site and find for any of several reasons, the test must be postponed. Or the test is started and for some reason, cannot be completed. The proposed language would require the RATA be redone if the delay puts the test outside the 60-day window. This is not necessary for short delays. In addition, some states allow RATAs to be completed up to 180 days before the CPT.

CRWI suggests the proposed language in appendix A to subpart EEE of part 63, section 5, should be amended to read:

> "When a comprehensive performance test is also required under § 63.1207 to document compliance with emission standards, the RATA must occur within 60 days of the comprehensive performance test, or as approved by the permitting authority."

Removing the never-implemented requirement that sources install and operate PM CEMS;

EPA is proposing to remove the particulate matter (PM) continuous emission monitoring (CEM) requirements in 40 CFR 63.1209(a)(1) and 40 CFR 63.1206(b)(8). CRWI supports that decision and offers the following information to support this change. EPA is correct that PM CEMs are technically infeasible for certain segments of this source category. There are two primary issues with using PM CEMs on hazardous waste combustors both relating to particle characteristics. These systems rely on the attenuation of radiation (either light or a beta particles). This attenuation is measured using a detector that gives a milliamp signal. To convert that milliamp signal to mass, one needs to calibrate against a reference method. There are no calibration gases for PM CEMs. This calibration must be developed by concurrently measuring the PM emissions using a version of Method 5 and comparing this to an average detector reading. To further complicate matters, particles will have different densities and the size, shape, and color of particles may impact the detector output. As long as the particle size, shape, color, and density remain the same, PM CEMs can be successfully calibrated, meet annual certification requirements, and be used to monitor PM emissions. This may be the case for certain hazardous waste combustor that feed a single stream with little variation in the feed stream. However, for a large segment of the hazardous waste combustor universe, feed stream is in a state of continuous change. Some hazardous waste incinerators, particularly commercial operators, treat thousands of different waste streams. As such, the organic, metals, halogens, and inert minerals contents vary considerably. It is technically impossible to create calibration curves for every potential waste feed or combination of feeds, and unreasonably difficult to select and switch calibration curves based on what is being fed at any specific time. Such

creates untenable operational and compliance nightmare for both the facility and the regulatory authority.

In addition, CRWI is aware of at least two studies which have shown that the calibration of a PM CEMs is impacted by various factors.

The first is in a report submitted to the Agency as part of the comments on the 2011 National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters proposed rule.[16]

This action proposed to require all sources with heat inputs greater than 250 million British thermal units (Btu) per hour or greater burning biomass, coal or residual oil to install and certify PM CEMs. Georgia Pacific in conjunction with National Council of Air and Stream Improvement (NCASI) implemented a project to study the feasibility of implementing PM CEMs on multifuel boilers burning heterogeneous fuel mixtures including biomass with high and variable moisture. The PM Monitoring systems worked well in the study and required minimal maintenance.

The study identified two major problems with the forward scatter monitoring systems studied. The relationship between PM concentration measured by the PM CEMs and the manual refence method varied when the fuel mixtures changed. The changes resulted in the system needing several different correlation curves for the different fuel combinations. Secondly the system did not meet the Relative Response Audit (RRA) requirements when tested three months after the initial installation and calibration. Other issues identified during the study were the high variability in the Method 5 measured values when using non co-located Method 5 sampling trains, difficulty in measuring instantaneous fuel flow rates which is critical in determining the Btu value of fuel burned during the test, integrating and maintaining the ancillary equipment required for determination of PM emission rates, and the complexity associated with converting PM concentrations to a PM mass emission rate when burning multiple fuels.

The report is Attachment 1 of the NCASI comments.[17] It showed that calibration curves were substantially different when burning different fuels (see Figure 4.1.4, PDF page 45 of 277, and Figure 4.2.5, PDF page 53 of 277). The report details other issues with the CEMs but the important part for this discussion is that the calibration curves could be different based on the material being fed.

The second report was from a manufacturing facility using a high temperature combustion process burning natural materials (rock) to produce a product. The

[16] 76 FR 80,598. December 23, 2011.
[17] Docket ID No. EPA–HQ–OAR–2002-0058-3505. At PDF page 33 of 277.

facility uses a baghouse to control particulate matter emissions and dry sorbent injection (DSI) to control SO_2 emissions. The original correlation curve was developed while injecting lime. During their initial the RRA performed the year after developing a correlation curve using lime injection, the PM CEMs met the criteria for acceptance under Performance Specification 11 (PS-11). Between the first and second RRA the facility switched their sorbent from lime to a sodium carbonate material. They failed their second RRA. Based on PS-11, the facility preformed additional tests and developed a second calibration curve that had a similar slope but the intercept of the curve moved from approximately 1.5 to 3.5. At this facility, the fuel burned and the material burned stayed consistent. However, the material injected into the air pollution control system was changed. The dominate particulate was the material used for the DSI system. For this facility, simply changing from a calcium oxide/carbonate-based material to a sodium-based carbonate material resulted in a significant enough change in the optical characteristics of the particulate requiring a new correlation curve to be developed.

Many of these same issues described above in the two case studies will apply directly to the use of PM CEMs on HWC's which burn highly variable waste materials. The size, shape, color, and density of the particles required to be measured can be vastly different from moment to moment across a wide range, because the nature of the waste being combusted varies significantly. Wood products, paper products, organic wastes, plastics, rubber, and a host of other types of materials that may be in a waste stream will produce particulate matter with unique physical characteristics. Given the fact that the current generation of PM CEMs have proven to be unreliable in situations far less challenging than waste incineration, CRWI believes that it is proper for EPA to remove the current PM CEMs requirements. We also believe it is proper to allow the use of PM CEMS where the facility with a stable waste stream can show the CEMs can be calibrated and pass annual testing requirements. EPA's process for doing this is reasonable.

Other minor editorial corrections.

Postmark definition

CRWI supports the proposed modification to the definition of Postmark. A significant portion of documents sent to regulatory authorities is sent via commercial delivery services. The proposed change reflects current use.

Modifications to 40 CFR 63.1207(g)

The Agency is proposing to add several requirements to the current regulatory language in 40 CFR 63.1207(g). While we consider it unnecessary, we do not object to adding the sentence that HWC units cannot conduct a performance test during SSM events. From a practical standpoint, facilities could not meet the isokinetic sampling requirements as required in the test methods without operating under

normal or steady-state conditions. As such, these tests would be invalid and could not be used for showing compliance. From a practical standpoint, the proposed sentence adds nothing.

More of a concern is the proposed addition of the middle two sentences. 40 CFR 63.1209(j) through (o) are very prescriptive on what parameters must be monitored during testing. In addition, 40 CFR 1207(f) has extensive instructions on what must be included in the comprehensive performance test plan. All of these must be included in the test plan submitted to the permitting authority for approval prior to testing. They also must be included in the test report submitted as part of the Notice of Compliance. Thus, these requirements are already addressed. There is no need to duplicate the effort. CRWI suggests these two sentences below be dropped in the final rule.

> ~~The owner or operator must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent the entire range of normal operation, including operational conditions for maximum emissions. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.~~

Removing Method 0023A

EPA is proposing to remove the option to use Method 0023A to demonstrate compliance with the dioxin/furan (D/F) standards. CRWI understands that Method 23 has been revised and is the Agency's preferred method to demonstrate compliance with D/F limits. However, Method 0023A offers some advantages that Method 23 does not. Should a facility want to combine trains to measure semi-volatile organic compounds as well as D/F under Method 23, they must request permission to modify method. This creates an additional, unnecessary step in the process. EPA Method 23 as revised March 2023 is only amenable to high resolution GC/MS analyses of D/F, PCBs, and PAHs as stack emissions. Method 23 does not nor ever has accommodated concurrent sampling and analysis measurements of semi-volatile organic compounds without significant modifications. On the other hand, Method 0023A already has this permission included in the method. Using Method 0023A instead of Method 23 has become the industry's preferred process when combined trains are needed. In addition, Method 23 has numerous, yet unresolved technical issues that complicate its use in the field and subsequent analysis. CRWI suggests keeping Method 0023A until the issues with combined trains and the technical issues with Method 23 have been resolved.

Revised regulatory language in 40 CFR 63.1211(a)(1)

EPA is proposing to revise the reporting requirements in 40 CFR 1211(a)(1). CRWI understands that these provisions are included in other NESHAPs so that excess

emissions could be estimated and reported. One difference in the HWC NESHAP as compared to all other NESHAPs is that in the HWC NESHAP, there is already a regulatory requirement to minimize emissions – the automatic waste feed cut off system. HWC's are not allowed to feed hazardous waste when the operating parameters are out of range as defined in their latest performance test. Once an emission limit or OPL is exceeded, hazardous waste feed is cut off. That is the process by which these units minimize emissions during upset conditions.

In addition, the proposed language asks for "the start date, start time, end date, end time, and cause of each failure" and "the affected sources and equipment" and "the applicable standard that was not met." All of these are already required under 40 CFR 63.10(e)(3)(v). This requirement is expanded upon on page 12-2 of Volume 4 of the 2005 Technical Support Document for the HWC MACT Standards. It should be noted that the proposed modifications to Table 1 to Subpart EEE of Part 63 (General Provisions Applicable to Subpart EEE), include a reference to the provisions in 63.10(c), (e), and (f) as being applicable to subpart EEE. These requirements appear to be a duplication of effort. As such, CRWI sees no need to require this twice.

CRWI's largest concern with this addition is the requirement to estimate the amount of emissions that occur due to these events. For facilities which burn liquid hazardous waste only, the residence time is typically 2 to 3 seconds at the most. Any emissions during timeframe would be difficult to accurately estimate and would not be significant. For facilities that burn solid hazardous waste, estimates based on the waste inventory in the combustion zone (e.g., kiln) at the time would result in highly inaccurate and overstated emissions data that is not useful for any purpose. CRWI suggests the Agency remove the requirement to "~~the quantity in pounds of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.~~"

C-15. What, if any, other clarifications we should make, including but not limited to which emission limits and OPLs apply when hazardous waste is not in the combustion chamber and the combustor is not complying with an otherwise applicable requirement under 40 CFR 63.1206(b)(1)(ii) as discussed in section IV.E.10 of this preamble.

In C-15, EPA is asking for comments on what clarifications the Agency should make as to what emission limits and OPLs should apply when hazardous waste is not in the system and the unit is not complying with an otherwise applicable requirement. The hazardous waste source categories contain a number of different systems, configurations, and associated otherwise applicable requirements. This request involves complex issues with multiple practical ramifications that CRWI cannot adequately address in these comments. However, we would welcome the opportunity to do so in the future.

C-16. An approach to set standards for HAP without current regulation only "as necessary" based on current emissions levels.

CRWI agrees with EPA that Section 112(d)(6) permits EPA to revise HAP standards only "as necessary." 42 U.S.C. § 7412(d)(6) (directing EPA to "review, and revise as necessary (taking into account developments in practices, processes, and control technologies), emission standards promulgated under this section no less often than every 8 years.)"

"It is a 'fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme.'" *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 133 (2000). That is particularly true when it comes to "the word 'necessary,' which has always been recognized as a word to be harmonized with its context." *Armour & Co. v. Wantock*, 323 U.S. 126, 129-30 (1944). Something may be "necessary" if it is "absolutely needed," *Merriam Webster's Collegiate Dictionary* (10th ed. 1994), or "essential, indispensable, or requisite," *Random House Collegiate Dictionary* (rev. ed. 1980). Sometimes "necessary" implies a looser fit, such as "convenient" or "useful." *M'Culloch v. Maryland*, 17 U.S. 316, 421 (1819). But however tight or loose, it is impossible to evaluate necessity without appreciating the relationship between the thing in question and a goal or end. In other words, an action or intervention can only be "necessary" with respect to some "desired goal." *GTE Serv. Corp. v. FCC*, 205 F.3d 416, 423 (D.C. Cir. 2000).

Determining whether revisions are "necessary" under Section 112(d)(6) therefore requires understanding the statutory scheme of Section 112. And the clear purpose of Section 112 is to regulate sources of HAP emissions to protect the public from adverse effects of the regulated HAPs. *See, e.g.*, 42 U.S.C. §§ 7412(b)(3)(B), (C) (substances shall be included or deleted from regulation under Section 112 based on "adverse effects to human health or adverse environmental effects"). So, in asking whether revisions are "necessary" within the meaning of Section 112, the inquiry is whether the revisions are "needed" or "essential" or even (at the looser end) "useful" *for protecting public health*.

For decades, EPA has noted that the findings underlying an evaluation of whether a regulation already provides an ample margin of safety for public health "should be key factors" in deciding whether regulation is "necessary" under Section 112(d)(6). (National Emission Standards for Coke Oven Batteries, 70 Fed. Reg. 19992, 20009 (Apr. 15, 2005)) ("[W]e believe that the findings that underlie a section 112(f) determination should be key factors in making any subsequent section 112(d)(6) determinations for the related section 112(d) standard."); *see also* National, Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers, 71 Fed. Reg. 17729, 17731-32, 17736 (Apr. 7, 2006)) (same); (National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries, 72 Fed.

Reg. 50716, 50730 (Sept. 4, 2007); *State of North Dakota v. EPA*, 24-1119, Doc. No. 2089013, at 79 (D.C. Cir. Dec. 10, 2024) (finding certain controls unnecessary under 112(d)(6) due in part to "the relatively small reductions in health risks"); National Emission Standards for Halogenated Solvent Cleaning, 73 Fed. Reg. 62384, 62404 (Oct. 20, 2008)) ("the instruction to revise 'as necessary' indicates that EPA" may consider "relevant factors" beyond technology, "such as costs and risk"); National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing, 71 Fed. Reg. 76603, 76606 (Dec. 21, 2006)) (considering the "effect in reducing public health risk" in determining that it was not "necessary" to revise HAP emission standards).

In the proposed HWC rule, EPA set numerical emission limits and work practices for HF and HCN under 112(d)(6). EPA did not, however, make an explicit finding, as it must, that such regulations are "necessary." Moreover, CRWI does not believe it is "necessary" to set emission limits for HF and HCN here for the simple reason that the Agency's risk assessment for these pollutants shows that the estimated HF and HCN emissions for all sources do not pose any risks. Because that is the case, the revised limits are not "necessary" and must be removed.

As a central part of this rulemaking, the Agency completed a residual risk assessment for a number of hazardous air pollutants. This effort is documented in the Residual Risk Assessment for the Hazardous Waste Combustors Source Category in Support of the 2025 Risk and Technology Review Proposed Rule.[18] HF and HCN were included in this risk assessment. There are no cancer slope factors for these two HAPs. However, there are chronic and acute exposure guidelines for both, estimated using a hazard quotient process. EPA describes this process as follows.

> Unlike linear dose-response assessments for cancer, noncancer health hazards generally are not expressed as a probability of an adverse occurrence. Instead, the estimated human health risk for noncancer effects is expressed by comparing an exposure to a reference level as a ratio. The hazard quotient (HQ) is the estimated exposure divided by a reference level (e.g., the RfC). For a given HAP, exposures at or below the reference level (HQ ≤ 1) are not likely to cause adverse health effects. As exposures increase above the reference level (HQs increasingly greater than 1), the potential for adverse effects increases. For exposures predicted to be above the RfC, the risk characterization includes the degree of confidence ascribed to the RfC values for the compound(s) of concern (i.e., high, medium, or low confidence) and discusses the impact of this on possible health interpretations.[19]

[18] Docket ID No. EPA-HQ-OAR-2004-0022-0723.
[19] *Ibid* at PDF page 33 of 1489.

The results of these calculations can be found in Table 5 of Appendix 10.[20] This table lists the risk calculations for all HAPs modeled. EPA calculated HQs for REL, AEGL1, AEGL2, ERPG1 and ERPG2. For example, the definition of REL is

> "the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration. RELs are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature and are designed to protect the most sensitive individuals in the population by the inclusion of margins of safety."[21]

The definitions of AEGL1, AEGL2, ERPG1, and ERPG2 can be found at the same location.

Using the HF and HCN data in Table 5 of Appendix 10, CRWI calculated the minimum, maximum, and mean HQ's for HF and HCN. Those results are shown in the following table.

		REL	AEGL1	AEGL2	ERPG1	ERPG2
HF	Mean	0.00192	0.00059	0.00002	0.00030	0.00003
	Maximum	0.02000	0.00700	0.00030	0.00400	0.00040
	Minimum	0.00005	0.00002	0.00000	0.00001	0.00000
HCN	Mean	0.00875	0.00143	0.00039		0.00029
	Maximum	0.20000	0.03000	0.00800		0.00600
	Minimum	0.00003	0.00000	0.00000		0.00000

The mean HQ for REL was 0.002 for HF and 0.009 for HCN. Both are significantly below an HQ of 1. The maximum HQ for REL was 0.02 for HF and 0.2 for HCN, also well below 1.

As stated above, "exposures at or below the reference level (HQ ≤ 1) are not likely to cause adverse health effects." Thus, EPA's risk assessment showed that current emissions of HF and HCN are significantly below a level that would cause adverse health effects. Accordingly, based on EPA's risk calculations, setting any limits for either HF or HCN is not "necessary."

PAH and PCB are already controlled under EEE

In the preamble, the Agency states that PCBs and PAHs are already controlled under the 2005 final rule and as such are not subject to the requirements of the

[20] *Ibid* at PDF page 1331 of 1489.
[21] *Ibid* at PDF page 1141 of 1489.

LEAN decision.[22] CRWI believes that the Agency is correct in that determination. In the 2005 final rule,[23] the Agency states

> "EPA has already adopted MACT standards for control of POM and PCBs emitted by these sources in the 1999 rule, which standards were not reopened or reconsidered in this rulemaking. These standards are the CO/HC standards, which in combination with the Destruction Removal Efficiency (DRE) requirement, assure that these sources operate continuously under good combustion conditions which inhibit formation of POM and PCBs as combustion byproducts products, or destroy these HAP if they are present in the wastes being combusted."

Footnote 73 includes a reference to the June 3, 2015 action where the Agency announced they had completed the requirement in the Clean Air Act to regulate emissions from 90% of the aggregated emissions for seven specific HAPs. In Table 1, the Agency states that polycyclic organic matter (POM), mercury, PCB, dioxins, and furans are being controlled under 40 CFR Part 63 Subpart EEE. These two reference makes it clear that POMs and PCBs were already regulated.

What is not immediately clear is whether PAHs are also controlled under the 2005 final rule. For that, one must dig a little deeper. EPA defines POMs[24] as a "broad class of compounds that includes the polycyclic aromatic hydrocarbon compounds (PAHs), of which benzo[a]pyrene is a member." In addition, EPA states in a 1998 publication[25] that "By definition, all PAH compounds can be classified as POM but not all POM compounds can be defined as PAHs." Thus, by regulating POMs in the 2005 rule, they also regulated PAHs since PAH are a subset of POMs.

Startup, shutdown, and malfunction (SSM) plan comments

On July 24, 2024, EPA proposed to eliminate the current malfunction provisions in 40 CFR Part 63 Subpart EEE.[26] CRWI commented extensively opposing that proposed revision. In the 2025 proposed rule, EPA is withdrawing the 2024 malfunction proposal. We support the partial withdrawal of the 2024 proposed rule.

The proposed SSM work practice meets the requirement of the Clean Air Act that emission limits apply at all times

As proposed, CRWI believes that the SSM work practice meets the requirements of the Clean Air Act that emission limits apply at all times. CRWI submitted extensive

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[22] 90 FR 50,833.
[23] 70 FR 59,433.
[24] https://www.epa.gov/sites/default/files/2016-09/documents/polycyclic-organic-matter.pdf
[25] Locating and Estimating Air Emissions from Sources of Polycyclic Organic Matter, EPA-454/R-98-014, July 1998. page 3-2. https://www.epa.gov/sites/default/files/2020-11/documents/polycyclic_organic_matter.pdf.
[26] 89 FR 59,867.

comments showing this for malfunctions in 2024.[27] Below we expand that discussion to include startups and shutdowns.

Background and rationale for why the proposed SSMP work practices meet the requirements that an emissions limit apply at all times

1. September 1999 HWC MACT Rule

   In its September 30, 1999 final MACT rule for HWCs,[28] EPA included startup, shutdown, and malfunction provisions. The provisions only applied, however, when hazardous waste was not in the combustion chamber. EPA argued that restricting the exemption in this manner would protect against industry "gaming the system" to avoid violations. Industry challenged this position, primarily arguing that it made the provisions non-achievable, and thus in violation of the Clean Air Act (CAA) Section 112(b)(3). In its brief in the D.C. Circuit on this issue, industry argued:

   > Section 112 technology-based MACT standards must be "achievable." This Court has held that "achievable" means able to be achieved under the worst reasonably foreseeable circumstances. Because all technologies will fail on occasion, courts have held that technology-based standards must contain defenses to noncompliance for such failures. EPA's disallowance of the use of SSMPs when hazardous waste is in the combustion chamber, and EPA's characterization of ESV openings as evidence of violations, renders the rule "unachievable."[29]

   Emphasis added.

2. D.C. Circuit's decision in *Cement Kiln Recycling Coal. v. E.P.A.*, 255 F.3d 855 (D.C. Cir. 2001)(CKRC)

   In its decision in the litigation challenging various aspects of the 1999 HWC MACT rule, the court did not make a final decision on the SSM issue, but rather held:

   > Here, in contrast, we have chosen not to reach the bulk of industry petitioners' claims, and leaving the regulations in place during remand would ignore petitioners' potentially meritorious challenges. For example, industry petitioners may be correct that EPA should have exempted HWCs from regulatory limits during periods of startup, shutdown, and malfunction, permitting sources to return to compliance by following the steps of a startup,

[27] EPA-HQ-OAR-2004-0022-0664.
[28] 64 FR 52,828.
[29] Joint initial brief of industry petitioners at 88, *CKRC* 99-1457, submitted August 16, 2000.

> shutdown, and malfunction plan filed with the Agency. We have similar doubts about EPA's decision to require sources to comply with standards even during openings of emergency safety valves caused by events beyond the sources' control.

Id. at 872.

3. EPA's response to *CKRC* – AWFCO and SSM Provisions in the 2005 HWC NESHAP rule

In response to the *CKRC* decision, EPA included SSM provisions in the 2005 final HWC MACT rule. In the preamble to the rule, EPA expressed agreement with commenters "who state that sources **must** be exempt from technology-based emission standards and operating limits during startup, shutdown and malfunction events."[30] (emphasis added). EPA explained its rationale as follows:

> Technology is imperfect and can malfunction for reasons that are not reasonably preventable. The regulations **must** provide relief for such situations. We believe that existing case law supports this position. *See, e.g. Chemical Mfr's Assn. v, EPA*, 870 F.2d at 228-230 (daily maximum limitations established at 99th percentile reasonable because rules also provide for upset defense for unavoidable exceedances); *Marathon Oil v. EPA*, 541 F.2d qt 1272-73 (acknowledged by commenter). As commenters noted, the DC Circuit intimated in CKRC that some type of exception from compliance with standards during startup, shutdown and malfunction periods was required.

Id. (emphasis added).

In response to comments that emissions can increase during malfunctions and potentially exceed the standards, EPA agreed that any exceedances caused by malfunctions must be minimized and noted that the rule required that sources maintain compliance with the automatic waste feed cutoff system during malfunctions. *Id.*

In the preamble to the July 2024 proposed rule,[31] the Agency stated "Although no statutory language compels the EPA to set different standards for periods of malfunction, we have the discretion to do so where feasible."[32] CRWI agrees. In fact, the Agency already has a regulatory requirement in 40 CRF Part 63 Subpart EEE to minimize emissions when malfunctions occur. This is the Automatic Waste Feed Cut Off (AWFCO) requirement.[33] Each facility is required to have a "functioning system that immediately and automatically cuts off the hazardous

[30] 70 FR 59,494.
[31] 89 FR 59,867.
[32] 89 FR 59,870.
[33] 40 CFR 63.1206(c)(3).

waste feed" when any operating parameter limit, any emission standard monitored by a CEMs, or the allowable combustion chamber pressure is exceeded. This also applies if the span for any continuous monitoring system is exceeded or fails or when the AWFCO system fails. There is also a requirement to investigate the cause of the AWFCO should the event result in an exceedance of any emission limit and take corrective measures to prevent future incidents.[34] In addition to semi-annual reporting of excess emissions, additional reporting is required for a facility that has more than 10 exceedances of emission limits while hazardous waste is in the chamber in a 60-day period.[35] This system has been a requirement since the first HWC MACT regulations were promulgated in 1999.[36]

An AWFCO is designed to minimize emissions by cutting off the primary source of regulated emissions (e.g., particulate, HCl, and metals) from the hazardous waste feed. Doing so, the facility removes or limits the source of specific potential emissions. A good analogy is how responders handle a leak. The first step is to stop the leak. Once the leak has been stopped, the responders can deal with cleaning up a spill. This is the same process performed by the AWFCO requirement. When an event occurs, the first thing the facility does is shut off waste feed. While it may take time for some of the waste to work its way through some units (a rotary kiln may take an hour while a liquid incinerator may only take seconds), the facility has done what it can to minimize emissions during the event. This AWFCO system has been in place, originally under RCRA and continued under NESHAP, and functioning properly for waste incineration since the 1980s.

4. D.C. Circuit Opinion in *Sierra Club v EPA*

As EPA discusses in the preamble to the July 2024 proposed rule, in 2008, the D.C. Circuit decided *Sierra Club v EPA*, 551 F.3d 1019 (D.C. Cir. 2008). It is very important for purposes of the proposed SSM provisions of Subpart EEE to understand precisely what the D.C. Circuit decided and did not decide in this case. The court vacated two provisions of the **NESHAP general provisions** that exempted sources from compliance with certain substantive emission limits during malfunctions, holding that those general provisions violated the Clean Air Act requirement that "some Section 112 standard apply continuously." *Id.* at 1021. The court noted that it was bound to follow precedent establishing that challenges to EPA's interpretation of the Clean Air Act are governed by *Chevron v. NRDC, 467 U.S. 837* (1984). *Id.* at 1026. The court cited legislative history to support its holding that compliance with a Section 112 standard must be continuous, as opposed to "intermittent." *Id.* at 1027. The court rejected the argument that Section 112's "general duty" clause (requiring sources to operate

[34] 40 CFR 63.1206(c)(3)(v).
[35] 40 CFR 63.1206(c)(3)(vi).
[36] 64 FR 52,828. September 30, 1999.

at all times, including periods of startup, shutdown, and malfunctions (SSM), consistent with good air pollution practices for minimizing emissions) required continuous compliance:

> Because the general duty clause is the only standard that applies during SSM events – and accordingly no section 112 standard governs these events – the SSM exemption violates the CAA's requirement that **some** section 112 standard apply continuously.

Id at 1028 (emphasis added). It is critical for our purposes to note what the court did not address in this case – **it did not address SSM provisions under any particular NESHAP such as the HWC MACT**. The opinion is not, therefore, determinative in any way of whether SSM provisions **of Subpart EEE** violate the requirement that "some" Section 112 standard apply continuously. CRWI does not dispute the court's legal conclusion that some limits must apply at all times under Section 112. As discussed above, the AWFCO and SSM provisions of Subpart EEE **are provisions that apply continuously**, and therefore they are perfectly consistent with the *Sierra Club* opinion.

The court noted that the original 1994 SSM regulations contained four key provisions that, working together, were sufficient to prevent the SSM exemption from becoming a "blanket" exemption":

> To avoid creating a "blanket exemption from emission limits," EPA's 1994 rule required that (1) sources comply with their SSM plans during periods of SSM; (2) SSM plans be reviewed and approved by permitting authorities like any other applicable requirement; (3) SSM plans be unconditionally available to the public, which could participate in evaluating their adequacy in the permit approval process; and (4) SSM plan provisions be directly enforceable requirements. 59 Fed. Reg. at 12423 []. In the rulemakings challenged here, however, EPA has eliminated all of these safeguards. SSM plans are no longer enforceable requirements, and EPA has expressly retracted the requirement that sources comply with them. 71 Fed. Reg. at 20447 []. EPA also has eliminated any requirement that SSM plans be vetted for adequacy and any opportunity for citizens to see or object to them.

Id. at 1025.

The problem, the court held, is that EPA had over the years, eliminated these four "cornerstones." *Id.* But, it is clear that EPA believed that if the SSM provisions contained these cornerstones, it would satisfy the Clean Air Act requirement of continuous compliance. Quoting EPA, the court stated:

> The EPA believes, as it did at proposal, that the requirement for a[n] [SSM] plan is a reasonable bridge between the difficulty associated with determining

> compliance with an emission standard during these events and a blanket exemption from emission limits. The purpose of the plan is for the source to demonstrate how it will do its reasonable best to maintain compliance with standards, even during [SSMs]."

Id. at 1026.

Finally, the *Sierra Club* court noted that EPA had not purported to defend the general duty provision under Section 112(h), which provides that EPA can promulgate alternative "work practice" standards in lieu of numerical emission limits if it was not feasible in the Administrator's judgment to issue such numerical standards. *Id.* So, the court demonstrated that it was comfortable with the principle that work practices are acceptable as long as they demonstrate continuous compliance with Section 112. The AWFCO is not a work practice but a specific and independent regulatory requirement of Subpart EEE. But the AWFCO serves the same purpose as a work practice – it restricts emissions of HAPs through a requirement that is not a number. But it nonetheless restricts emissions continuously, and, therefore, it is consistent with *Sierra Club.*

5. The "hopelessly generic" problem does not apply to the AWFCO provision of the HWC MACT.

   In the past, EPA has argued that generic operational or work practice standards for malfunction are not feasible because they would have to apply in a wide range of circumstances that cannot be determined in advance. The *US Sugar* court stated:

   > Second, the Petitioners have not demonstrated and the EPA does not concede that setting work-practice or GACT management-practice standards would even be feasible for periods of malfunction. As for work-practice standards, the EPA would have to conceive of a standard that could apply equally to the wide range of possible boiler malfunctions, ranging from an explosion to minor mechanical defects. Any possible standard is likely to be hopelessly generic to govern such a wide array of circumstances. Similar problems exist for setting GACT management practices. These management practices would also need to apply to the wide range of possible malfunctions, and the EPA would need to determine that the standard would "reduce emissions of hazardous air pollutants," an evidence-based standard that is difficult (perhaps impossible) to apply to the unpredictable circumstances of malfunctions. 42 U.S.C. § 7412(d)(5). Thus, we reject the Industry Petitioners' argument that the EPA was required to set a work-practice or GACT management-practice standard for malfunction periods.

   U.S. Sugar v EPA, 831 F.3d 579, 608-09 (D.C. Cir. 2016).

The "hopelessly generic" problem does not apply to the AWFCO provision of the HWC MACT. As described above, that provision is a generic response to all malfunctions for HWCs. It is continuous and meets the CAA requirements to minimize emissions.

6. The proposed SSM work practices meet Clean Air Act requirements that some standards apply at all times.

   Hazardous waste combustors conduct a comprehensive performance test every five years to show they are in compliance with the applicable regulations. During that test, they set operational limits that must be complied with at all time when hazardous waste is in the combustion chamber. If any operating parameter or directly measured emission limit is exceeded, the unit must shut off waste feed and is not allowed to restart waste feed until those operating parameters are back into their allowable range. Should a unit decide to continue to operate outside their operating parameter limits (OPL) as established during their latest comprehensive performance test, this would be a violation subject to enforcement.

   To reiterate, according to the *Sierra Club* opinion, SSM plans, as promulgated in 1994, had four "cornerstones:"

   - Sources must comply with their SSM plans during periods of SSM;
   - SSM plans must be reviewed and approved by permitting authorities like any other applicable requirement;
   - SSM plans must be unconditionally available to the public, which could participate in evaluating their adequacy in the permit approval process; and
   - SSM plan provisions must be contain enforceable requirements.

   In the current action, EPA is proposing an SSM work practice standards that would include the following:

   (1) a clean fuel requirement for periods of startup and shutdown;
   (2) a requirement to follow an approved SSM plan during periods of SSM; and
   (3) the AWFCO system requirement.

   CRWI believes that work practice as proposed meets the Clean Air Act requirement that some emission limit apply at all times.

The 180 day period for approval of a startup, shutdown, and malfunction plan (SSMP) may not be adequate

In the preamble, the Agency states that most facilities are already operating under an approved SSMP and that 180 days is a reasonable timeframe for any facility

without an approved plan to review their plan, revise it, submit it, and receive approval.[37] CRWI agrees with the Agency that the goal is to get everyone operating under an approved SSMP. Our primary concern is the requirement to have an approved SSMP within 180 days.

EPA is correct in their preamble discussion that hazardous waste combustors are already operating under their SSMP. Where EPA is not correct is their belief that most already have approved plans or that getting approval will take less than 180 days. While most have submitted their SSMP and moved their air limits to a Title V permit, most have not received formal approval for their SSMP. For facilities that already have approved SSMPs, 180 days is adequate to make the transition. All facilities have SSMPs in place. Getting them submitted within a time frame is not an issue. Our concern is what happens on day 181 when the facility does not have an approved plan. Do they continue to operate but cannot startup, shutdown, or have a malfunction until they have an approved plan? Or do they have to stop operations until those plans are approved? Neither are good solutions.

While the facility can control submittal of the SSMP, they cannot control how and when the permitting authority approves that plan. In other situations of this type, the facility submits the plan, the permitting authority makes a completeness determination, and the permitting authority reviews the plan. The most likely outcome of that review is a series of questions on the submitted plan is sent to the facility. This initiates a discussion between the facility and the permitting authority to resolve the questions raised. This effort often takes longer than the proposed 180 days. Extending the time period would not resolve this concern. CRWI suggests modifying the requirements to allow the facility to operate under their submitted plan if an approval is not granted by day 180. This is similar to what happens with permit renewals. Facilities submit revised permits but continue to operate under their previous permit until the new one is approved. Here the facilities are already operating under a SSMP as required under the current regulations.

EPA has allowed a similar process in other NESHAPs. The rule for hydrochloric acid production units[38] requires a site-specific monitoring plan be submitted as a part of the facility's notice of compliance.[39] Any revisions to the plan are submitted with the next semi-annual report. This seems like a viable option for SSMPs also. Another place where the Agency has used submittal is in the leak repair requirements for refrigerants.[40] While not a NESHAP, it is an air rule. Here the requirements state that if a leak cannot be repaired in the allotted time frame, the facility can request an extension. That extension will be considered as approved unless the permitting agency notifies the facility otherwise.

[37] 90 FR 50,852.
[38] 40 CFR Part 63 Subpart NNNNN.
[39] 40 CFR 63.9005(d).
[40] 40 CFR 84.106(f).

CRWI is not opposed to having an “approved” SSMP. Our concern is what happens if the permitting authority takes longer than the allotted time to make that approval. The facility can control when the plan is submitted and what is in the plan. They cannot control when and how the permitting authority will approve that plan. Facilities need a method to continue to operate until that plan is approved. The facility would still be required to respond to questions on the submitted plan during the process. Facilities should not be punished for something beyond their control. CRWI urges the Agency to modify the language so that submittal satisfies the requirement.

The definitions of startup and supplemental fuels need modification.

As CRWI suggested in earlier discussions with the Agency, there is considerable variation in construction and operations of HWCs. This is reflected between source categories and within source categories. For example, the startup process for a solid fuel boiler that burns coal, solid waste, and hazardous waste may not be the same as an incinerator that only burns hazardous waste. Within the hazardous waste incinerator source categories, there are similar differences in structure and operations. These differences make it difficult to develop a definition of startup and shutdown that fits all sources. For example, certain solid fuel boilers (SFB) startup on supplemental fuel, begin supplying useful thermal energy to a steam header, then begin combusting **non-hazardous** waste. The SFB could operate in this way (i.e., normal operation) for several weeks before a need to manage hazardous waste would arise. Based on the current definition of startup, the SFB would be in “startup” for the entire period until hazardous waste was introduced. Again, these periods last for several weeks at times and would not be representative of a “startup” period. This is why CRWI suggested site-specific startup and shutdown plans, as approved by the permitting authority, early in the discussions with the Agency. At the very least, the Agency should develop different startup and shutdown definitions for incinerators, cement kilns, boilers, and halogen acid furnaces.

If the Agency insists on one definition for all, as proposed, CRWI has two concerns. The first concern is the proposed definition of startup does not consider switching from an “otherwise applicable” standard. While the second sentence allows a facility to startup under an “otherwise appliable” standard, the first sentence fails to take that into consideration. For example, some liquid fired boilers are also used as vent control devices for other “otherwise applicable” NESHAPs. They will routinely come up on a clean fuel (as defined in that NESHAP) and add vents once the unit gets to its allowable requirements. They may operate under these conditions for a period of time before transitioning to EEE. This does not appear to be possible in the proposed definition of startup. CRWI suggests adding a phrase to the definition of startup as indicated below to resolve the startup definition issue.

1206(c)
(10) *Requirements for periods of startup and shutdown* –
(i) *Startup*. Startup begins with the firing of supplemental fuel in the combustion chamber or when transitioning from an otherwise applicable standard, and ends once the system has stabilized but no later than 15 minutes after hazardous waste is fed into the combustion chamber. When startup is conducted under an otherwise applicable standard according to § 63.1206(b)(1)(ii), startup is defined in accordance with the otherwise applicable standard.

In addition, CRWI is confused why the second sentence in the definition of startup is included. When a startup is conducted in an otherwise applicable standard, EEE does not apply. They are starting up in the otherwise applicable standard and are required to follow the startup (and shutdown) requirements of that standard. CRWI does not see the need for this sentence and suggests it be deleted in the final rule.

The second concern pertains to the definition of supplemental fuels. When CRWI suggested this definition, we did not take into consideration the normal startup for a solid fuel boiler (SFB). That was an oversight on our part. These units burn coal and their primary function is to provide steam for the facility. They also burn solid waste and hazardous waste at various times during their operations. As proposed, the facility could only cold start the SFBs under compliance with Commercial and Industrial Solid Waste Incinerator (CISWI) rule, which would allow the use of coal during startup. Once the boilers were out of the CISWI startup period, they could operate for a period of time in non-hazardous waste combustion mode under CISWI. When they are ready to switch to hazardous waste mode, all OPLs would be verified and the feed of hazardous waste could begin. Unfortunately, that transition period is not allowed because the proposed definition of a supplemental fuel does not include coal. While the current definition allows for other supplemental fuels as "authorized in the startup, shutdown, and malfunction plan," that plan may not be approved within the 180 days allotted. This may be true for other HWC source categories as well. To resolve this oversight, CRWI suggests that the definition of supplemental fuels under 1206(c)(10)(i)(B) include coal (and perhaps other clean fuels as defined in the 40 CFR Part 63 Subpart DDDDD[41]) but restrict that use to SFBs and possibly other source categories (e.g., cement kilns) as needed.

Other issues.

Proposed modification to 40 CFR 63.1207(c)(3)

EPA established interim emission limits in 2002 for incinerators, cement kilns, and lightweight aggregate kilns.[42] The initial comprehensive performance test was to be

[41] Table 3 to Subpart DDDDD of Part 63, Title 40.
[42] 67 FR 6,792. February 13, 2002.

conducted within 180 of the compliance date.[43] Compliance with these standards was set for 2003. When the permanent replacement standards for incinerators, cement kilns, and lightweight aggregate kilns were finalized in 2005, the Agency realized that the cycle for subsequent comprehensive performance tests (CPT) would be shortened from their typical five-year cycle. As such, the Agency decided to allow these three source categories an additional 6 months to allow better coordination with subsequent CPTs. That was the reason for the first sentence in 63.1207(c)(3).

While it seems reasonable to delete the initial sentence (all of these source categories have completed their initial CPT), it also seems reasonable and practicable to give the source categories that must conduct an initial CPT for HF and HCN a reasonable amount of time to coordinate with their next CPT for other HAPs. CRWI suggests allowing impacted facilities to incorporate the added testing requirements at the next required CPT. In addition, the current proposed regulatory language (P 87 of the redline strikeout version of the regulations) requires that the initial test for the sources with HF and HCN numerical emission limits conduct their test prior to the compliance date. This directly conflicts with the requirements in 63.1207(c)(1) giving sources six months to complete an initial test.

CRWI suggests the Agency give facilities required to test for HF and HCN for the first time until the next required CPT to conduct their initial test for these two HAPs. This schedule would be less disruptive and allow for coordinating subsequent CPTs for other HAPs.

<u>The proposed requirement in 1208(b)(7) to use Method 320</u>

In 40 CFR 63.1208(b)(7)(A), the Agency is proposing to require all HCN stack testing to use Method 320. They are also proposing to allow a facility to submit an alternate test method to the Administrator should the facility have entrained water droplets. No other options are given. CRWI would like to point out that the emission limits for HCN for solid fuel boilers were calculated from one source. That source used OTM-29 to develop that data. While not universal, the Agency typically uses the same method to show compliance as was used to develop the data used to set those limits. While we understand that OTM-29 has issues, if that data was sufficient to set the emission limits, it should also be sufficient to show compliance with those limits. CRWI requests that the Agency allow the use of OTM-29 to measure HCN emissions. In addition, CRWI suggests allowing use of alternative methods such as California Air Resources Board (CARB) Method 426.

[43] 64 FR 52,908. September 30, 1999.

Proposed removal of 40 CFR 63.1208(b)(7)

The Agency is proposing to remove paragraph 40 CFR 63.1208(b)(7). This change would remove the ability for facilities to use Methods 0010, 0030, or 0031 (or others) for the destruction and removal efficiency (DRE) requirement compliance in 40 CFR 63.1206(b)(7). The Agency did not provide a reason or basis for this change. Should the Agency remove this paragraph, it will be removing the means by which applicants perform organic DRE as required by 40 CFR 63, Subpart EEE. Specifically, SW-846 Method 0010, which is often combined with Method 0023A, are specific methods routinely used to measure performance related to DRE of semi-volatile organic compound (SVOC) principal organic hazardous constituents (POHC). Additionally, Methods 0030 and 0031 are SW-846 Methods used to measure performance related to the DRE of volatile organic compound (VOC) POHCs. As far as we know, there are no equivalent or comparable methods included under the 40 CFR 60 regulations. It appears that EPA cannot at the same time require the demonstration of DRE compliance under 40 CFR 63, Subpart EEE and make these proposed changes to 40 CFR 63.1208(b) unless and until equivalent or comparable methods for doing VOC and SVOC POHC DRE emission testing are developed, validated, and promulgated at 40 CFR 60. CRWI is opposed to removing this paragraph.

Fence line monitoring

EPA considered requiring fenceline monitors but came to the conclusion that the source of emissions from HWCs are not fugitive but from stacks that average 125 feet tall.[44] EPA is correct in making that determination. Fenceline monitors are not designed to measure emissions that come from stacks. EPA accounted for these emissions as a part of their risk review which showed the risk to be nine in one million, well below the threshold of 100 in one million that requires EPA to act. Fenceline monitors are designed to measure fugitive emission leaks from piping which are minimal from this source category.

[44] 90 FR 50,845.