UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Standards for Air Curtain Incinerators That Only Burn Wood Wastes, Yard Wastes and Clean Lumber; Provision for Commercial and Industrial Solid Waste Incineration Units: Temporary Use Incinerators and Air Curtain Incinerators Used in Disaster Recovery, 91 Fed. Reg. 13,542 (March 20, 2026)	Docket Nos. EPA–HQ–OAR–2025–0068 EPA–HQ–OAR–2003–0119

COMMENTS OF SIERRA CLUB, CALIFORNA COMMUNITIES AGAINST TOXICS, AIR ALLIANCE HOUSTON, HEALTHY GULF, CONCERNED CITIZENS AROUND MURPHY, GLOBAL ALLIANCE FOR INCINERATOR ALTERNATIVES, MOUNTAIN TRUE, SCIENCE FOR GEORGIA, CLEANAIRE NC, UPSON ENVIRONMENTAL AND GOVERNMENT TRANSPARENCY, SOUTHERN ENVIRONMENTAL LAW CENTER, NATURAL RESOURCES DEFENSE COUNCIL and EARTHJUSTICE

Submitted via regulations.gov and email on May 4, 2026, by Earthjustice

INTRODUCTION

We submit these comments on the regulatory changes proposed in this notice of potential rulemaking concerning the application of section 129 emission standards to air curtain incinerators and to commercial and industrial solid waste incinerators following natural disasters, and in response to the solicitation of comments to gather information in connection with a potential future proposed rulemaking to exclude so-called “pyrolysis/combustion devices” from the definition of other solid waste incinerators.

First, we are strongly opposed to any proposal to exclude pyrolysis/ combustion devices from coverage under section 129 emission standards. These devices combust solid waste and fall plainly within the definition of solid waste incineration units for which Congress required the Environmental Protection Agency (EPA) to establish appropriate emission standards. Excluding them from coverage would be contrary to the Clean Air Act's requirement that EPA set emission standards for all units that combust solid waste. The idea of excluding these units rests on the mistaken factual premise that these devices are not combusting waste, when a review of how they function demonstrates that combustion is a consistent and unavoidable feature of their operation. Excluding these units would also be bad policy and frustrate Congress's purposes in enacting the Clean Air Act because their operation will result in the release of precisely the sorts of harmful air pollutants that Congress directed EPA to regulate in section 129.

Second, we also strongly oppose the proposal to carve out an exemption from pollution control requirements for what EPA misleadingly describes as "the temporary use of incineration units subject to [commercial and industrial solid waste incineration] regulations during disaster recovery." Standards for Air Curtain Incinerators That Only Burn Wood Wastes, Yard Wastes and Clean Lumber; Provision for Commercial and Industrial Solid Waste Incineration Units, 91 Fed. Reg. 13,543, 13,553 (Mar. 20, 2026) ("Proposed Rule"). In practice this proposal would permit the widespread use of uncontrolled incineration for an indefinite length of time to dispose of any non-hazardous waste present in a declared disaster zone and would encourage disaster recovery practices that would likely result in the uncontrolled incineration of hazardous materials as well. People who have endured natural disasters like the

Los Angeles wildfires, the Texas floods, and the hurricanes and storms that recently struck Florida and North Carolina need not suffer additional health harms caused by uncontrolled waste incineration. Exempting such incineration from pollution control requirements would contravene the Clean Air Act.

Third, we oppose the proposal to exclude air curtain incinerators from Title V permitting requirements and to adopt testing and monitoring requirements for air curtain incinerators that fail to provide assurance that they are operating in compliance with applicable opacity requirements. Any regulation of air curtain incinerators separately under a new subpart must ensure that the units are limited to only the combustion of "wood wastes, yard wastes, and clean lumber" and must include a clear process for regulatory approval and public notice of any location where incineration will occur.

DETAILED COMMENTS

I. The definition of "municipal waste combustion unit" should not be revised to exclude pyrolysis/combustion units from coverage under section 129 emission standards. [OSWI-1]

Pyrolysis incinerators have existed for decades, and since shortly after the Clean Air Act Amendments of 1990 were enacted, EPA has recognized that they combust waste and are solid waste incineration units for which section 129 regulations are required. *See* Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Municipal Waste Combusters, 60 Fed. Reg. 65,387, 65391 (Dec. 19, 1995) (Municipal Waste Combustors (MWC) Rule). This longstanding conclusion that pyrolysis/combustion units are incinerators is consistent with the text and purpose of the Clean Air Act, and there is no reason for the agency to depart

from it now. Indeed, because they combust solid waste, such units are solid waste incineration units within the plain meaning of the Clean Air Act. It would contravene the Act and defeat the Act's purposes to exempt them from having to meet section 129 requirements for incineration units. EPA should not attempt to amend through agency action the limited set of narrow and carefully considered statutory exceptions to section 129's broad coverage that Congress included in section 129(g)(1).

EPA therefore should not propose to revise the definition of "municipal waste combustion unit" to exclude pyrolysis/combustion units from coverage under section 129. Doing so would be contrary to law, would rest on mistaken factual premises, and would leave significant sources of harmful air pollutants effectively unregulated. The operation of pyrolysis/ combustion units involves combustion that results in the emission of highly toxic chemical compounds that are harmful to human health and the environment even at very low levels. Accordingly, we oppose any regulatory action to exclude pyrolysis units from the coverage of section 129 standards. Finally, given the unusual nature of the solicitation of public comment on this issue, in the absence of any concrete proposed regulatory revision, we emphasize that there is no current regulatory proposal upon which any final action might be taken on this issue.

Importantly, people in communities across this country need protection from the toxic emissions of these pyrolysis/combustion units, protection that Congress intended section 129 of the Clean Air Act to provide. Although the cursory solicitation of public comment and absence of any administrative record leaves commenters without full information about the inventory of units that would fall within this category and the nature of the emissions that they would produce, EPA itself previously acknowledged that such units emit

hazardous air pollutants including dioxins and polycyclic aromatic hydrocarbons ("PAHs"), an extremely toxic category of organic chemicals, 86 Fed. Reg. 50,296, 50,299–300 (Sept. 8, 2021), and there is considerable evidence that they also emit metals. Exposure to these pollutants, many of which persist and build up in the environment long after they have been emitted, can cause cancer, birth defects, and other catastrophic health harms.

A. The solicitation of comments on the definition of "municipal waste combustion unit" can only serve as a prelude to a future proposed rule and cannot serve as the basis for any final action.

1. The definition of "municipal waste combustion unit" can be revised only after a proper proposed rulemaking.

Although the Proposed Rule contains a solicitation of public comment on the definition of "municipal waste combustion unit," EPA has not proposed any specific regulatory actions or revisions in connection with this solicitation. Because there is no actual proposed regulatory revision attached to the solicitation of comments on this definition, the agency's intended next steps following the solicitation are not entirely clear. However, we appreciate EPA's commitment that "[p]ublic comments received" in response to the solicitation of comments on this topic will only be used to "help inform the development of a proposed rule on advanced recycling."[1] We support this important acknowledgement that the solicitation of comments on this issue is only a prelude to a potential future

[1] EPA, "Fact Sheet: Proposed Rule: Standards for Air Curtain Incinerators that Only Burn Wood Wastes, Yard Wastes and Clean Lumber; Provision for Commercial and Industrial Solid Waste Incineration Units: Temporary Use Incinerators and Air Curtain Incinerators Used in Disaster Recovery," at 1 (Mar. 2026), https://www.epa.gov/system/files/documents/2026-03/aci-consolidation-temp-use-fact-sheet.pdf [https://perma.cc/F5J6-DZBT].

proposed rulemaking, which makes clear that the cursory solicitation of input here does not provide a basis to promulgate a final rule directly on this issue and that if the agency intends to take any further action on this issue it will publish a proposed rulemaking that includes a specific proposed regulatory revision and necessary supporting materials that comport with the requirements for rulemaking under section 307(d) of the Clean Air Act and affords interested parties and the public an opportunity for informed public comment.

We also direct EPA's attention to an error contained in the solicitation of comment on this topic. In reciting the regulatory history on this issue, EPA states that "[i]n 2023, the EPA proposed to withdraw the 2020 proposed definition change." 91 Fed. Reg. at 13,553. This is incorrect. In 2023, EPA did not "propose to withdraw" the definition change; EPA withdrew the proposal to change the definition. *See* Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Other Solid Waste Incineration Units Review; Withdrawal of Proposed Provision Removing Pyrolysis/Combustion Units, 88 Fed. Reg. 36,524 (June 5, 2023). That is how EPA explained the action it was taking at the time in 2023. *See, e.g.*, *id.* ("In this action, the EPA is *withdrawing* that proposed modification [of the definition]." (emphasis added)); *id.* ("As of June 5, 2023, EPA *withdraws* the proposed definition 'Municipal waste combustion unit' in § 60.2977, published at 85 FR 54178, on August 31, 2020." (emphasis added)); *id.* ("Why is the EPA *withdrawing* the proposed provision?" (emphasis added)); *id.* at 36,525 ("Accordingly, as of June 5, 2023, the EPA *withdraws* the definition for 'Municipal waste combustion unit' in § 60.2977, which published at 85 FR 54211, on August 31, 2020." (emphasis added)). Indeed, in the withdrawal notice, the agency explained that before proceeding with any changes to the definition, it would need to develop a more robust "technical and regulatory understanding of

the pyrolysis process" and found that it would not be appropriate for pyrolysis sources "to become unregulated emission sources" during the time necessary for such a regulatory review. *Id.* at 36,525.

Because the solicitation of comment on this topic is both unusual and limited to a quite cursory discussion, we believe it is important to be clear that there is no pending proposed rulemaking to revise the definition of "municipal waste combustion unit" to exclude pyrolysis/combustion units, and so there is no basis for EPA to take any final action on this topic without first issuing a future notice of proposed rulemaking on the issue. Any final action on this topic must be preceded by a proposed rulemaking that comports with the requirements of section 307(d) and affords the public a full and fair opportunity to engage in informed comment on EPA's proposed actions.

2. Viewed as a proposed regulatory revision, the solicitation of comment on this topic does not comply with the procedural requirements for Clean Air Act rulemaking contained in section 307(d).

Even if it were viewed as a proposed regulatory revision, which it is not, the solicitation of comment on this topic would not comply with the procedural requirements for Clean Air Act rulemaking contained in section 307(d). This section sets a well-established process for rulemaking under the Act in order to facilitate informed public participation and thereby strengthen EPA's ultimate decisionmaking. *See* 42 U.S.C. § 7607(d). To promote these purposes, Congress required that any proposed rulemaking under the Act include a "statement of basis and purpose" of the proposed regulatory action or revision that includes a summary of "the factual data on which the proposed rule is based" and "the methodology used in obtaining the data and in analyzing the data." *Id.* § 7607(d)(3)(A), (B). Congress further required that "[a]ll data,

information, and documents" upon which the proposed rule relies "be included in the docket on the date of publication of the proposed rule." *Id.* § 7607(d)(3).

The cursory discussion of this issue in the solicitation of comments in the Proposed Rule, of course, does not include any of these elements. Congress required this level of evidentiary support and explanation for Clean Air Act rulemakings so that public commenters would be informed of the grounds that EPA believed supported the proposed regulatory actions or revisions. This allows commenters to raise questions about the data or methodology that the agency's proposal relies upon, to identify gaps or misinterpretations of the evidence, and to provide additional information or evidence that the agency did not take into account. The absence of this required and essential data, information, and documentation in the solicitation of comments here precludes the sort of informed public participation the law requires.

B. Excluding pyrolysis/combustion units from coverage under section 129 emission standards would be contrary to law.

The text of the Clean Air Act makes entirely clear that Congress intended EPA to regulate all facilities that combust "any" solid waste material under section 129. Section 129(a)(1) mandates regulation of all "solid waste incineration units," and section 129(g)(1) defines "solid waste incineration unit" to mean "a distinct operating unit of *any* facility which combusts *any* solid waste material from commercial or industrial establishments or the general public (including single and multiple residences, hotels, and motels)." 42 U.S.C. § 7429(a)(1), (g)(1) (emphasis added). Section 129(g)(1) also provides a short and specific list of four types of facilities that combust waste but are not solid waste incinerators, confirming that Congress did not intend to

exclude any other waste-combusting facilities from the definition of "solid waste incineration unit" or from regulation as incinerators. *Id.* § 7429(g)(1).

In repeated decisions, the D.C. Circuit has confirmed the Clean Air Act's plain meaning. When EPA tried to define incinerator in a way that excluded certain waste-combusting boilers and industrial heaters from its standards for commercial and industrial incinerators under 42 U.S.C. § 7429(a)(1)(C), on the grounds that they "use a process that recovers thermal energy from the combustion for a useful purpose," the D.C. Circuit held EPA's attempt to redefine incineration units to be flatly unlawful. *NRDC v. EPA*, 489 F.3d 1250, 1256–61 (D.C. Cir. 2007). The Court expressly confirmed that when Congress defined solid waste incineration unit to mean "any" facility which combusts "any" solid waste material, 42 U.S.C. § 7429(g)(1), it meant exactly that. Applying the usual meaning of the word "any," the Court "interpret[ed] section 129 … to unambiguously include among the incineration units subject to its standards *any* facility that combusts *any* commercial or industrial solid waste material at all—subject to the four statutory exceptions identified above." *Id.* at 1257–58 (emphasis added). The Court expressly rejected EPA's claim that it has discretion to decline to regulate waste-combusting facilities under section 129 based on its views about their purpose or to elect to regulate waste-combusting units under section 112 instead of section 129. *Id.* at 1260–61.

Nine years later, the D.C. Circuit confirmed and expanded on its holding in *NRDC*. *See U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 643–44 (D.C. Cir. 2016). *U.S. Sugar* addresses the regulations for commercial and industrial incinerators that EPA promulgated following the vacatur of its previous regulations in *NRDC*. Once again, EPA refused to set section 129 standards for certain waste-combusting facilities, "cyclonic burn barrels." "The EPA

protest[ed] that it reasonably chose not to regulate cyclonic burn barrels at this time, given how little information it had on them." *Id.* at 644. The Court held "this argument misses the point: in light of the unambiguous statutory command to promulgate numeric standards for *all* solid waste incineration units, the EPA had no discretion to avoid regulating any such units—even if its choice to avoid regulating these units would have been otherwise reasonable." *Id.* The Court made clear that not only does EPA lack any authority to exempt or exclude waste-combusting facilities from section 129 regulation but that EPA' s failure to affirmatively establish regulations for any such facility is a violation of its "nondiscretionary statutory duty" to do so. *Id.* at 643.

In short, because the Clean Air Act unambiguously requires section 129 standards for *any* facility that combusts any waste at all, it requires standards for pyrolysis/combustion units if they combust "any" waste "at all." *U.S. Sugar*, 830 F.3d at 643 (quoting *NRDC*, 489 F.3d at 1257–58).[2] The pyrolysis/combustion units at issue here undoubtedly "combust" solid plastic waste. As explained below, combustion occurs because of the presence of oxygen as the facility breaks down the hydrocarbon materials that make up the plastic waste feedstock into component parts through the application of heat in the first chamber and again when gas produced in this process is directly routed into and burned in the second chamber of this integrated system. These units are therefore "solid waste incineration units" under the plain language of the Act, *see id.*, and so must be regulated under section 129 emission standards.

[2] The Clean Air Act defines "municipal waste" as "refuse (and refuse-derived fuel) collected from the general public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, *plastics*, leather, rubber, and other combustible materials and non-combustible materials such as metal, glass and rock." 42 U.S.C. § 7429(g)(5) (emphasis added).

Some contend that pyrolysis does not involve combustion because there is no open flame. This misses the mark because the plain meaning of the word "combust" in 1990 when Congress enacted section 129 was not limited to processes involving open flame. Neither lay nor scientific understandings of what constituted "combustion" in 1990 required an open flame. For example, one common dictionary provided a definition for "combustion" in 1992 with four meanings: (1) "[t]he action or operation or burning"; (2) "[t]he combination of a substance with oxygen, accompanied by the generation of heat and sometimes light"; (3) "oxidation, as of fuel, or food in the body"; and (4) "tumult." *See* New Illustrated Webster's Dictionary (J.G. Ferguson Publishing 1992); *see also* Webster's New World Dictionary of American English, Third College Edition (Simon & Schuster, Inc. 1991) (defining "combustion" as (1) "the act or process of burning"; (2) "rapid oxidation accompanied by heat and, usually, light, as with magnesium"; (3) "slow oxidation accompanied by relatively little heat and no light, as with a carbohydrate"; and (4) "violent excitement or agitation; tumult."); Webster's New World Dictionary of American English, Third College Edition (Simon & Schuster, Inc. 1988) (same); Webster's New World Dictionary, Second College Edition (Williams Collins Publishers 1980) (same). As these common definitions from the time of enactment show, an open flame is not required. The same is true for scientific understandings of what constitutes combustion—open flame is not a prerequisite for combustion. *See* Part I.C.1., *infra*. Because what takes place during the operation of pyrolysis/combustion units is "combustion" as commonly understood when Congress enacted section 129, these units are covered as "solid waste incineration units" under the plain meaning of the Act.

Indeed, Congress itself considered whether to make any exceptions to the broad requirements enacted in section 129 and chose to make only four carefully limited exceptions: (1) hazardous waste incinerators regulated under the Solid Waste Disposal Act; (2) "materials recovery facilities … which combust waste for the primary purpose of recovering metals"; (3) "qualifying small power production facilities, … or qualifying cogeneration facilities" that combust waste to produce energy; and (4) certain "air curtain incinerators" provided that they only burn clean vegetative waste and comply with opacity limits established by EPA. 42 U.S.C. § 7429(g)(1). The existence of these four limited categorical statutory exclusions indicates that Congress knew how to craft exclusions when it wished to do so, and "in fact did so for four specific classes of combustion units." *NRDC*, 489 F.3d at 1259. "Where Congress explicitly enumerates certain exceptions to a general prohibition, additional exceptions are not to be implied, in the absence of a contrary legislative intent." *Nat. Res. Def. Council v. EPA*, 489 F.3d 1364, 1374 (D.C. Cir. 2007) (quoting *TRW Inc. v. Andrews*, 534 U.S. 19, 28 (2001)); *Sierra Club v. EPA*, 294 F.3d 155, 160 (D.C. Cir. 2002) (inferring from the Clean Air Act's inclusion of certain transport-based exemptions from ozone attainment requirements "that the absence of any other exemption for the transport of ozone was deliberate"); *Sierra Club*, 551 F.3d at 1027–28 (rejecting EPA attempt to exempt major sources of hazardous air pollutants from Clean Air Act emission standards during periods of startups, shutdowns, and malfunctions).

As these exceptions demonstrate, Congress explicitly considered whether to exempt facilities from the requirements of section 129 when they combust solid waste for purposes other than disposal alone, such as to generate heat or energy, and determined to exclude facilities from section 129 requirements only

in these four narrow and carefully defined circumstances. Accordingly, the D.C. Circuit has expressly rejected the notion that EPA can exclude incinerators from section 129 standards just because they have additional purposes when they combust solid waste, such as the recovery of energy. *NRDC*, 489 F.3d at 1258–60. Had Congress intended to exempt such units, it could have "expressly provided for their exemption in the statute." *Id.* at 1259–60. This precedent makes clear that EPA does not have discretion to exclude solid waste incineration units from coverage under section 129 simply because it believes the combustion of solid waste is occurring for purposes other than or in addition to disposal.

Because pyrolysis/combustion units are "solid waste incineration units" under "the best reading of the statute," EPA should "effectuate the will of Congress" as expressed by the Clean Air Act's text and ensure that they are covered by appropriate section 129 standards. *Loper Bright Enters. v. Raimondo*, 603 U.S. 369, 400 (2024).

C. Excluding pyrolysis/combustion units from coverage under section 129 emission standards rests on mistaken factual premises.

The suggestion that pyrolysis/combustion units should be excluded from coverage under section 129 rests on the mistaken factual premises that combustion is not occurring in the pyrolysis process and that an open flame is required for combustion to occur. Both of these assumptions are false.

EPA has described pyrolysis/combustion units as "two chamber *incinerators* with a starved air primary chamber followed by an afterburner to *complete* combustion." 85 Fed. Reg. 54,178, 54,187 (Aug. 31, 2020) (citing 70

Fed. Reg. 74,870, 74,876–77 (Dec. 16, 2005)) (emphasis added). And EPA itself has repeatedly recognized that such units are "incinerators." *Id.*

This was correct because combustion is integral to the pyrolysis process as conducted in these units in multiple respects. First, pyrolysis/combustion units combust waste in their first chamber. Second, pyrolysis/combustion units combust waste in their second chamber. Ultimately, pyrolysis/combustion units are integrated systems that burn waste.[3] For each of these reasons independently, pyrolysis/combustion units are "solid waste incineration units" under section 129 of the Clean Air Act.

1. Pyrolysis/combustion units combust waste in their first chamber.

Combustion is occurring in the primary chamber of pyrolysis/combustion units.[4] Combustion occurs in this primary chamber because oxygen is present and reacts with the hydrocarbon present in the feedstock, such as plastic waste. This is particularly so given how pyrolysis is practiced in real world settings, including the pyrolysis/combustion devices in question here. Solid waste is fed into the first chamber of pyrolysis/combustion units either in batches or in a

[3] This is true for single chamber pyrolysis designs as well, such as in a recent patent application. *See* WIPO, WO2026024667 – Singe-Chamber Combustion with Pyrolysis, https://patentscope.wipo.int/search/en/WO2026024667. This design is described as "[a] multi-walled single-chamber pyrolysis system [that] includes an inner cylinder defining an oxygen-starved pyrolysis zone and an *overlying primary combustion zone* in fluid communication through an opening for biomass gas flow and combustion." *Id.* (emphasis added).

[4] The word "pyrolysis" is derived from Ancient Greek, combining pyro (πῦρ), meaning "fire" or "heat," with lysis (λύσις), meaning "separating" or "dissolving." Coined in the late Nineteenth Century, the term literally means "decomposition by fire or the action of heat."

continuous feed. 86 Fed. Reg. at 50,299–300. There, at least some of the waste reacts with oxygen and is combusted. *Id.*; Declaration of Ranajit Sahu, Ph.D., attached as **Ex. A**. As explained in the attached declaration from Dr. Ranajit Sahu, Ph.D., "all gasification and pyrolysis of waste necessarily involves the combustion of at least some of the material being gasified or pyrolyzed." Sahu Decl. **Ex. A** ¶ 2. As EPA has previously acknowledged, there is some oxygen in the solid wastes being fed into the first chamber. 86 Fed. Reg. at 50,299–300. Further, although EPA indicated that it had no data for continuous mode facilities, *id.* at 50,299, any pyrolysis/combustion device that uses a continuous feed will necessarily be open to the outside to some extent, and such an opening to the air will introduce even more oxygen.

In practice, there is always some oxygen present in the first chamber during the operation of these units and therefore some combustion is necessarily occurring within the chamber. The Federal Remediation Technology Roundtable, of which EPA is a member, has correctly recognized that at least some combustion does occur in pyrolysis units. It states that although "[p]yrolysis is formally defined as chemical decomposition induced in organic materials by heat in the absence of oxygen," "[i]n practice, it is not possible to achieve a completely oxygen-free atmosphere; actual pyrolytic systems are operated with less than stoichiometric quantities of oxygen." Federal Remediation Technologies Roundtable, Pyrolysis Description, **Ex. B**, available at https://perma.cc/NM9A-4JHX. The fact that "some oxygen will be present in any pyrolytic system" means that, at a minimum, "nominal oxidation will occur." *Id.*

The Federal Remediation Technology Roundtable's description of pyrolysis is consistent with Dr. Sahu's declarations, which explain how the

presence of oxygen in the pyrolysis chamber is unavoidable. There are a number of potential sources of oxygen in the chamber. Supplemental Declaration of Ranajit Sahu, Ph.D., **Ex. C**, **¶¶ 5–6**. To begin with, there are multiple ways for air, including atmospheric oxygen, to enter the first chamber. *Id*. ¶ 5. These include "the initial air in the chamber in spite of any attempts to evacuate such air; air entering through the loading port of the chamber for the waste/fuel (which is open continuously in continuous feed facilities); and air that can enter through cracks or other openings to the chamber, especially in older chambers that deteriorate over time." *Id.* "[I]f the pyrolysis chamber or container is not perfectly sealed and maintained at greater than atmospheric pressure, external oxygen can be introduced into the pyrolysis process." Sahu Decl., **Ex. A**, ¶ 8. The presence of atmospheric oxygen in the chamber causes combustion. That means that the primary pyrolysis chamber is operating as an incinerator.

In any event, in practice, the materials introduced into these pyrolysis/ combustion units will also almost certainly contain some oxygen or oxygen compounds either from the composition of the materials themselves or from contamination organic materials on the waste plastics. *Id.*; Sahu Suppl. Decl., **Ex. C**, ¶ 6. There are numerous sources of oxygen in plastic waste used as a feedstock for the pyrolysis/combustion units, including contamination with oxygen-containing plastics from types of plastics that contain oxygen in the base polymers (such as polyethylene terephthalate), oxygen contained in various additives to plastics, and organic materials from food residue in food-contact applications for plastics.[5] Sahu Suppl. Decl., **Ex. C**, ¶ 6.

[5] *See generally* Kusenberg et al, *Characterization and impact of oxygenates in post-consumer plastic waste-derived pyrolysis oils on steam cracking process*

"For both reasons, it is impossible to operate a pyrolysis unit in the absence of all oxygen." Sahu Decl. **Ex. A**, ¶ 8. "As the temperature of organic material that is to be pyrolyzed/gasified is increased in order to effect the pyrolysis/gasification, the presence of some of the inherent oxygen in the material and/or any externally introduced oxygen will initiate combustion reactions while pyrolysis/gasification is going on. *Thus, some combustion is impossible to avoid in pyrolysis/gasification units*." *Id.* ¶ 9 (emphasis added).

EPA has never denied that oxidation of waste material is occurring or that it constitutes combustion. Indeed, even the American Chemistry Council, an industry trade group, concedes that oxygen is present in the first chamber. *See* American Chemistry Council, *ACC Comments on EPA's ANPRM — Potential Future Regulation Addressing Pyrolysis and Gasification*, [Docket No. EPA-HQ-OAR-2021-0382-0082] (ACC Comment), at 4 (admitting that an "irreducible amount of oxidation" may occur "because of practical limitations in trying to 'completely' remove oxygen from the system").

Instead, EPA has previously suggested that pyrolysis/combustion devices might be different given that not *all* of the waste material fed into the unit is combusted because the "oxygen available is less than the stoichiometric ratio (i.e., amount needed for complete combustion of the feed material)." 86 Fed. Reg. at 50,300. *See also* ACC Comment, at 4 (claiming that combustion occurring in the first chamber should not count because it is not "intentional and controlled").

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efficiency, Journal of Analytical and Applied Pyrolysis Vol. 118 (August 2024), https://doi.org/10.1016/j.jaap.2024.106571, attached as **Ex. D** (discussing sources of oxygen in oxygenated pyrolysis oils).

But this misses the point. Even if there were some hypothetical possibility of conducting pyrolysis with absolutely no oxygen present and therefore no combustion whatsoever occurring, that is not what is happening here. As both EPA and the American Chemistry Council have acknowledged, in any real world process, there will be some oxygen present, and therefore some combustive oxidation will occur.

This alone means that pyrolysis/combustion units are "solid waste incineration units." As the Clean Air Act and longstanding case law make clear, a "solid waste incineration unit" is "any" facility that combusts "any" waste "at all" unless it falls within one of the four statutory exceptions. 42 U.S.C. § 7429(g)(1); *U.S. Sugar*, 830 F.3d at 643 (quoting *NRDC*, 489 F.3d at 1257–58). It does not matter whether oxygen is present at a "stoichiometric ratio" or whether combustion of the waste material is "intentional," "controlled," or "complete" in pyrolysis/combustion units. So long as *any* waste *at all* is combusted in them—a point EPA and the American Chemistry Council have not disputed and cannot dispute—they are incinerators within the meaning of section 129 of the Clean Air Act.

EPA itself has previously recognized that at least some combustion occurs in the first chamber when it explained that the second chamber is used "to *complete* combustion." 85 Fed. Reg. at 54,187 (emphasis added). It would make little sense for EPA to say that the second chamber "complete[s]" combustion, *id.*, if no combustion took place in the first chamber.

In addition, for most pyrolysis/combustion units currently operating, the permit materials indicate that temperatures within the primary pyrolysis chamber may be 800 to 1200 degrees Fahrenheit during operation. *See*

generally Declaration of Jane Williams, **Ex. E** ¶ 9–10. Operation at these high temperatures likely increases the extent of combustion in the primary pyrolysis chamber. *See* Sahu Suppl. Decl. **Ex. C** ¶ 4. In addition, pyrolysis/ combustion units operating at higher temperatures tend to have shorter residence times in the chamber, which increases the incidence of volatile organic compounds in pyrolysis gas[6] and therefore the amount of harmful air pollutants ultimately released. *See* Williams Decl., **Ex. E** ¶ 6–8.

The byproducts of the operation of pyrolysis/combustion units also demonstrate that combustion is, in fact, happening. First, the emissions associated with these operations—which, unfortunately, EPA has not developed in the administrative record here—include harmful air pollutants associated with solid waste incineration. Research shows that the pyrolysis gases produced from processing plastic feedstocks in the first chamber of these units contain CO and CO_2 (i.e., byproducts of combustion).[7] *See* Sahu Suppl. Decl., **Ex. C** ¶ 7. Permit applications show that operators likewise expect these oxygen byproducts to be present in pyrolysis gas when it exits the first chamber.[8] This conclusively establishes the presence of oxygen—and hence

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[6] *See* Pivato et al, *Air-Polluting Emissions from Pyrolysis Plants: A Systematic Mapping*, Environments 2024, *11*, 149, https://doi.org/10.3390/environments11070149, attached as **Ex. F**.

[7] *See* Honus, S., et al., Pyrolysis gases produced from individual and mixed PE, PP, PS, PVC, and PET—Part II: Fuel characteristics, **Fuel**, 221 (2018) 361-373, Appendix B, attached as **Ex. G**.

[8] *See, e.g.*, Permit Application, Houston Refining to Texas Commission on Environmental Quality (March 10, 2025), attached as **Ex. H**, at A-3 (calculating over 13000 tons per year of oxygen in the waste gas flow from the thermal oxidizer); Permit Application, Clean Seas West Virginia Inc. to West Virginia Department of Environmental Protection (August 20, 2025), attached as **Ex. I**, at Attachment G – Process Description (recognizing presence of CO and CO2 in

combustion—in the first chamber. *Id.* Pyrolysis gases would not contain these oxygen compounds absent oxygen—and hence combustion—in the chamber. Even carefully controlled pyrolysis processing of plastic waste thus leads to combustion of that waste. *Id.* Because these pyrolysis gases are produced in the first chamber before being vented to the second chamber, this also shows that combustion of waste is happening specifically in the first chamber.

The ultimate air emissions from pyrolysis/combustion units also reflect the presence of oxygen in the process. A survey of research on air emissions associated with pyrolysis/combustion units shows that, like other solid waste incineration units, such operations are significant sources of carbon oxides, nitrogen oxides, sulfur oxides, dioxins, and polyaromatic hydrocarbons (PAH).[9] *See generally* Williams Decl., **Ex. E** ¶ 3–4. The fact that the pyrolysis process is producing various oxide emissions as byproducts also firmly establishes the presence of oxygen within the pyrolysis chamber.

The solid and liquid byproducts of the process further confirm that at least some materials are combusted in pyrolysis/combustion units. First, the production of "char" and "ash" from the pyrolysis process reflects the outcome of combustion. 86 Fed. Reg. at 50,299–300. As EPA itself has previously argued successfully in court, the production of char indicates the destruction of organic material. *See U.S. v. Rineco Chemical Industries,* 2009 WL 801608 at *10–*11 (E.D. Ark. 2009). In addition, the characteristics of the pyrolysis oils produced through the process also demonstrate the presence of oxygen in the

composition of pyrolysis gases); *id*. at pp. 93–94 (same); Terra Tech, Pyrolysis System Feasibility Study for the Port of Port Townsend (June 23, 2021), attached as **Ex. J**, at p. 15 (recognizing pyrolysis gases contain CO).

[9] **Ex. F**, Pivato, *Air-Polluting Emissions from Pyrolysis Plants, supra* note 6.

pyrolysis chamber. Research on the pyrolysis oil that is produced from the processing of plastic waste through these units have found "substantial amounts of oxygenates (1–10 wt%)" present in the resulting oils.[10] Permit applications by operators also show that they anticipate oxygen will be present in pyrolysis oils produced from the pyrolysis process.[11] The presence of oxygen in the oils that result from the pyrolysis process is clear evidence that oxygen is present in the first chamber. *See* Sahu Suppl. Decl., **Ex. C** ¶ 7. The Kusenberg study, **Ex. D**, also describes how there are limits on the amount of oxygen that is acceptable in pyrolysis oil for subsequent uses and outlines the steps that must be taken to remove the oxygen before further processing. This too demonstrates that oxygen—and thus combustion—is present during the pyrolysis process. By definition, the resulting oils could not be contaminated with oxygen if there is no oxygen present anywhere in the feedstock or the process.

Rather than dispute that some level of combustive oxidation is, in fact, happening in the pyrolysis chamber, supporters of the withdrawn 2020 proposal instead tried to claim that combustion requires an open flame. *See*, *e.g.*¸ ACC Comment at 4. But as discussed above, combustion can occur with or without an open flame and neither lay understandings of combustion as reflected in contemporary dictionary definitions at the time of the 1990 Clean Air Act Amendments, *see* Part I.B., *supra*, nor scientific understandings of combustion, *see* Sahu Suppl. Decl., **Ex. C** ¶ 3, require the presence of an open flame.

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[10] *See* **Ex. D**, Kusenberg, *Characterization and impact of oxygenates in post-consumer plastic waste-derived pyrolysis oils on steam cracking process efficiency*, *supra* note 5.

[11] *See* **Ex. I,** Permit Application, Houston Refining, at 4-3 (explaining that post-production, pyrolysis oil produced by the unit will be "stripped of oxygen").

Attempting to impose this extra-statutory requirement would be inconsistent with the plain text of the Clean Air Act and would conflict with Congress's purposes in enacting section 129. This is particularly so because Congress itself considered whether to make exceptions to the Act's broad definition of "solid waste incineration unit" and chose to make only four narrow exceptions not applicable here. Because combustion is occurring in the primary pyrolysis chamber, pyrolysis/combustion units are "solid waste incineration units" as defined in the Clean Air Act and must be regulated as such.

2. Pyrolysis/combustion units combust waste in their second chamber.

Even if no waste was combusted in the first chamber, combustion occurs in the second chamber where gases from the first chamber are burned. As noted above, EPA has stated the second chamber is used "to *complete* combustion." 85 Fed. Reg. at 54,187; 70 Fed. Reg. at 74,876–77. EPA has long recognized that this undisputed combustion occurring in the second chamber makes pyrolysis/combustion units solid waste incineration units for which section 129 regulation is required. As the preamble to the agency's municipal solid waste regulations, promulgated only a few years after the 1990 amendments were enacted, explained, "[m]unicipal solid waste combustion includes the direct combustion of [municipal solid waste] *or the combustion of [municipal solid waste] gases from pyrolysis or gasification*." 60 Fed. Reg. at 65,391 (emphasis added). EPA has successfully advanced this position in enforcement litigation, and the court rejected the defendant's claim that its facility did not burn solid wastes because only "vapor/inerts" from the first chamber were burned in the second chamber. *See Rineco Chemical*, 2009 WL 801608 at *10-11. This combustion necessitates regulation under section 129 as well.

3. Pyrolysis/combustion units are integrated systems that burn waste.

The nature of how pyrolysis/combustion units operate underscores that they are integrated systems in which feedstock such as plastic waste enters and the byproducts of incineration—ash, char, oxygenated oils, and harmful air pollutants—exit. As noted above, the Clean Air Act defines an incinerator as "a distinct operating unit of any *facility* which combusts any solid waste material." 42 U.S.C. § 7429(g)(1) (emphasis added). Pyrolysis/combustion units are "facilit[ies]" that combust waste involving two integrated chambers through which waste is directly and continuously routed. Whether the combustion happens in the first chamber, the second chamber, or both chambers (as is actually the case), there can be no dispute that some of the waste that is fed into these incinerators is combusted. *See* Sahu Decl. **Ex. A**, ¶¶ 10–13. The volume of solid waste that is fed into pyrolysis/combustion units is more than the volume of solids that come out—that is, any solid waste and any so-called "product" they create. This demonstrates that at least some of the waste that is fed into pyrolysis/combustion units is combusted.

EPA successfully made this same point—that burning waste in thermal treatment devices is still burning waste—in the *Rineco Chemical* case. There, the court cited EPA's conclusion that:

> materials being burned in incinerators or other thermal treatment devices, other than boilers and industrial furnaces, are considered to be "abandoned by being burned or incinerated" under § 261.2(a)(1)(ii), whether or not energy or material recovery also occurs. ... In our view, any such burning (other than in boilers and industrial furnaces) is waste destruction subject to regulation either under Subpart O of Part 264 or Subpart O and P of

> Part 265. If energy or material recovery occurs, it is ancillary to the purpose of the unit—to destroy wastes by means of thermal treatment—and so does not alter the regulatory status of the device or the activity.

2009 WL 801608 at *10 (citation omitted).[12]

The court went on to point out:

> The United States notes that ⋯ between 2003 and 2005, of the approximately 18.7 million lbs. of waste fed into the [Thermal Metal Wash Recycling Unit ("TMW")] annually, more than 2.6 million lbs. or at least 13.9% was unaccounted for, *i.e.* disposed of, burned, or incinerated in the treatment process, and that during the same period approximately 2 million lbs. or 10.7% of the output from the TMW was vapor/inerts, which are vented to the [thermal oxidation unit ("TOU")] where they are destroyed through burning and incineration. The United States notes as well that the presence of more than 4.4 million lbs. or at least 23.5% char indicates that the destruction of organic materials takes place in the TMW.

2009 WL 801608 at *10. The court concluded

> In any case, it is undisputed that vapor from the TMW is vented to the TOU where it is destroyed through burning and incineration. Thus, a portion of inputs to the TMW are volatilized by the high temperature, vented to the TOU, and destroyed through burning and incineration. In addition, the presence of substantial char shows that the destruction of organic materials takes place in the TMW.

[12] As noted above, the Clean Air Act makes clear that any operating unit that combusts any solid waste, including a boiler or an industrial furnace, is a solid waste incineration unit. 42 U.S.C. § 7429(g)(1); *NRDC*, 489 F.3d at 1257–61.

Id. at *11.

The same is true for pyrolysis/combustion units generally. There is no basis to deny that some of the waste that is fed into them is combusted. Indeed, EPA itself has acknowledged the integrated nature pyrolysis/combustion units by explaining they are "two chamber *incinerators*" in which the second chamber is used "to *complete* combustion." 85 Fed. Reg. at 54,187 (emphasis added). This statement recognizes not only that combustion happens in both chambers but that both chambers are part of a single "incinerator" that combusts waste. As Dr. Sahu's declaration explains,

> it is futile to artificially 'separate' these processes into idealized forms where only one of these processes can occur to the exclusion of the other(s). Thus, in a practical incinerator, including one designed to first pyrolyze/gasify substances, followed by the subsequent combustion of the gaseous products, some combustion is inevitable in the first or pyrolysis chamber. It is impossible to separate such multi-component devices and call them separate names. They are collectively as a whole an incinerator. They work together to combust the substances in the waste that is fed into them.

Ex. A, ¶ 13.

EPA should not change its position now and thus give credence to the attempt to disassemble the incineration process into component parts and then pretend that each stage, taken alone, does not constitute solid waste incineration. This approach cannot be reconciled with the plain text of the Clean Air Act or Congress's purposes in enacting objective, evidence-based limits on harmful emissions from solid waste incineration. Pyrolysis/ combustion units are a single facility involving integrated systems that take

plastic and other waste in and put out the byproducts of incineration in the form of char, ash, residual oils, and emissions of air pollutants. The process is properly viewed holistically for what it is: solid waste incineration.

D. Excluding pyrolysis/combustion units from coverage under section 129 emission standards would frustrate Congress's purposes in enacting section 129.

Not surprisingly, given that the pyrolysis process involves a form of combustion, it results in the emission of harmful air pollutants of precisely the sort that Congress directed EPA to regulate in section 129.[13] Excluding pyrolysis/combustion units from coverage under section 129 emission standards is thus contrary not only to the text of section 129 but also to the purposes for which Congress enacted the Clean Air Act. Leaving these harmful emissions effectively unregulated would be a mistake given the myriad threats these units present to public health and the environment.

It is well-known that pyrolysis/combustion units emit extremely toxic pollutants, including dioxins, furans, and PAHs, which can cause cancer even in tiny quantities and which persist in the environment and bioaccumulate. EPA itself previously acknowledged that "[r]egardless of the process category, through application of heat, pyrolysis disintegrates the long hydrocarbon bonds of the incoming feed materials and may generate *tars, oils, particulate matter, reduced sulfur and nitrogen compounds, and hazardous air pollutants (HAPs) including polycyclic aromatic hydrocarbons (PAHs).*" *See* 86 Fed. Reg. at 50,299–300 (emphasis added). Among the wastes combusted in

[13] *See generally* **Ex. F**, Pivato, *Air-Polluting Emissions from Pyrolysis Plants, supra* note 6.

pyrolysis/combustion units are modern plastics, which contain thousands of chemical additives and impurities, most of which are not publicly disclosed and many of which are toxic. These chemicals include inks, metals, halogens, organics, and multiple polymer types in a single product.[14] In addition, the waste contains chlorine which results in the creation of dioxin emissions. State-level permit data show that pyrolysis/combustion units emit toxic pollutants including lead, cadmium, selenium, 1,2-dichloroethane, chromium, vinyl chloride, barium, styrene, benzene, toluene, mercury, arsenic, dioxins, ethyl benzene, xylenes, naphthalene, acetaldehyde, formaldehyde, hydrochloric acid, methanol, and hexane.[15]

Moreover, to the extent pyrolysis/combustion units produce anything other than pollution, their so-called "product" will merely cause more toxic pollution when it is burned later at another facility. For example, a major output of a pyrolysis incinerator in Oregon was styrene, a toxic chemical and likely carcinogen[16] that the facility then shipped offsite to be burned.[17]

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[14] IPEN, SCP/RAC, UNEP and BRS (2020) Plastic's Toxic Additives and the Circular Economy, **Ex. K**, at 55; Roosen M, Mys N, Kusenberg M, et al. (2020) Detailed Analysis of the Composition of Selected Plastic Packaging Waste Products and Its Implications for Mechanical and Thermochemical Recycling, Environ Sci Technol. **Ex. L,** at 12; Wiesinger H, Wang Z and Hellweg S (2021) Deep Dive into Plastic Monomers, Additives, and Processing Aids. Environ. Sci Technol, American Chemical Society, **Ex. M**.

[15] *See* NRDC, "Greenwashing of Plastic Incineration" (2021), **Ex. N**.

[16] The Department of Health and Human Services' National Toxicology Program classifies styrene as "reasonably anticipated to be a human carcinogen." https://ntp.niehs.nih.gov/ntp/roc/content/listed_substances_508.pdf, **Ex. O**.

[17] *See* **Ex. N**, NRDC, "Greenwashing of Plastic Incineration," *supra* note 15.

Pyrolysis/combustion units also generate large quantities of hazardous waste. For instance, just one pyrolysis incinerator generated almost 500,000 pounds of hazardous waste in 2019.[18] That waste, which included benzene, lead, and other toxic metals, was shipped to be burned in waste disposal facilities all over the country—creating yet more human health and environmental damage.

The fact that the pyrolysis process results in the same sorts of harmful air pollutants as other solid waste incineration is not surprising because simply changing the word by which something is called does not cause a change in the laws of physics. Just like other incinerators, pyrolysis units disintegrate long hydrocarbon bonds in waste plastics, including through combustion, and this produces the emission of harmful air pollutants (along with ash, char, and residual oils and solids).

It is because of these harmful air pollutants that EPA previously found that pyrolysis/combustion units should not be left unregulated. *See* 88 Fed. Reg. at 36,525 (explaining that the agency did "not believe it would be appropriate for [pyrolysis/combustion units] to become unregulated emissions source," given the need to "ensure that public health protection is maintained for pyrolysis/combustion units").

In commentary on the withdrawn 2020 proposal, supporters of the proposed change complained that properly regulating the harmful air emissions of pyrolysis/combustion units would threaten the development of "circular economy efforts." But that would be true only if this so-called "circular

[18] *Id.*

economy" can only operate successfully by evading limitations on the harmful air pollution they cause. The so-called "circular economy" should not come at the cost of people's health or the environment. Existing section 129 emission limitations, particularly those that apply to other solid waste incinerators (OSWI), are not that onerous. It is a troubling concession if it is true that even these meager public health protections cannot be met by pyrolysis/combustion units. Imposing appropriate section 129 standards on the operation of pyrolysis/combustion units is necessary to ensure that their operation does not result in excessive emissions of harmful air pollutants and the concomitant public health and environmental harms such emissions cause. These significant public health and environmental harms must not be treated as mere externalities that can be disregarded. Excluding pyrolysis/combustion units from section 129 emission standards would create a "circular economy" that works only by fobbing these significant costs off on the public rather than requiring the operators to install appropriate and legally required emission controls.

Notably, the solicitation of comments seeks commentary on a proposal that effectively leaves pyrolysis/combustion units wholly unregulated under the Clean Air Act. Outside of section 129, there is no current proposal to regulate these sources of harmful air pollutants under any Clean Air Act provision. Such units are not recognized as a source category under section 112. In addition, Congress required the regulation of several air pollutants associated with solid waste incineration in section 129 that are not listed as hazardous air pollutants under section 112 of the Act, including sulfur dioxide (SO_2), oxides of nitrogen (NO_x), carbon monoxide (CO), and total and fine particulate matter. Because pyrolysis/combustion units engage in solid waste incineration, not surprisingly, they tend to emit these harmful air pollutants, which may not be regulated

under section 112. *See* **Ex. F**, Pivato, *Air-Polluting Emissions from Pyrolysis Plants*, *supra* note 6 (describing the release of sulfur dioxide (SO_2), oxides of nitrogen (NO_x), carbon monoxide (CO), and harmful particulates from pyrolysis/combustion units); Williams Decl., **Ex. E** ¶ 4–6.

Similarly, even if the agency were considering regulating these units under section 111 (without mentioning that in the solicitation of comments), regulation of them under section 111 would not make sense because it would leave significant gaps in the air pollutants and possibly sources covered. Because the pyrolysis/combustion process is a form of incineration, it has comparable emissions for which Congress directed EPA to establish objective, evidence-based floors for solid waste incineration units. But again several of these significant harmful air pollutants—including sulfur dioxide (SO_2), oxides of nitrogen (NO_x), carbon monoxide (CO), and particulate matter—would not necessarily be addressed in regulation under section 111. This includes several air pollutants associated with solid waste incineration for which Congress was particularly concerned with ensuring appropriate standards because they are persistent, bioaccumulative, and very toxic. EPA must ensure that that such emissions from pyrolysis/combustion units are subject to appropriate emission standards under section 129.

As explained above, we are opposed to any proposal to exclude pyrolysis/combustion units from the coverage of section 129 emission standards. Only continued regulation under section 129 ensures appropriate coverage of the sorts of harmful air pollutants associated with the operation of pyrolysis/combustion units. These significant sources of harmful air pollution must not be left effectively unregulated at the federal level.

E. Excluding pyrolysis/combustion units from coverage under section 129 emission standards would be arbitrary.

EPA should also not propose to exclude pyrolysis/combustion units from coverage under section 129 emission standards because doing so would be arbitrary. Treating pyrolysis/combustion units as anything other than solid waste incineration units would be inconsistent with how they operate and their longstanding treatment under law. EPA has long recognized that pyrolysis/combustion units are incinerators, and there is no basis for EPA to change its position on this issue.

In practice, pyrolysis/combustion units are comparable to starved-air incinerators developed in the 1960s. As a 2008 EPA training document explains, starved (or controlled) air incinerators were "designed primarily for solid waste" and use "two stages of combustion": solids are first fed into a primary chamber where air is controlled to less than the stoichiometric air requirements and organics are volatilized off the waste, and then a secondary chamber is used to complete combustion of VOCs and off gases. **Ex. P**. There has never been any dispute that these starved-air incinerators qualify as solid waste incineration units under section 129 of the Clean Air Act.

The basic operation of pyrolysis/combustion units is indistinguishable from these and other solid waste incineration units. Waste is fed into the unit and char, ash, pyrolysis oil, and the air emissions typically associated with solid waste incineration emerge from the unit. Trying to reconceptualize these units as anything other than incinerators turns on a mistaken effort to disaggregate an incinerator into component parts and then trying to argue that each part taken individually is an independent stage that does not constitute solid waste incineration. But these units are a single integrated system that must be treated

as a single unit. This semantic game does not affect the harmful emissions that result from this incineration process.

With good reason, then, EPA itself has long recognized that pyrolysis/combustion units are incinerators. In 1995, shortly after the enactment of the 1990 Clean Air Act Amendments, EPA concluded in the Municipal Waste Combustors Rule that pyrolysis/combustion units combust waste and are solid waste incineration units for which section 129 regulations are required. *See* 60 Fed. Reg. at 65,391. And as recently as 2020, EPA described pyrolysis/combustion units as "two chamber *incinerators* with a starved air primary chamber followed by an afterburner to *complete* combustion." 85 Fed. Reg. at 54,187 (emphasis added).[19] And although EPA has occasionally issued comfort letters that individual pyrolysis units are not subject to incinerator standards, EPA has also repeatedly recognized that pyrolysis/combustion units are incinerators subject to section 129 standards.[20]

[19] EPA's regulations for HMIWI also exclude "pyrolysis units," which are defined to mean "the endothermic gasification of hospital waste and/or medical/infectious waste using external energy," 80 Fed. Reg. at 50,300; 40 C.F.R. § 60.51c. However, these regulations do not contain any agency determination that these units are not incinerators, it simply excludes them from regulation as HMIWI. In any event, we believe these regulations are contrary to law and must be revised.

[20] For instance, the EPA recently determined that a pyrolysis unit did in fact meet the definitions of a very small municipal waste combustion unit and therefore it *was* subject to OSWI emission standards. EPA, "Request for 40 CFR Part 60, Subpart EEEE Applicability Determination for Sitos Group, LLC," January 9, 2024, https://perma.cc/88DR-4P7S, attached as **Ex. Q**. *See also* **Ex. R** (Letter from U.S. EPA Region 6 to Monarch Waste Technologies, LLC, "Applicability Determination – Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators (HMIWI) (40 C.F.R. Part 60, Subpart Ce) and New Source Performance Standards (NSPS) for HMIWI for Which Construction is Commenced After June 20, 1996 (40 C.F.R. Part 60, Subpart Ec) – Pyrolysis Unit to be Constructed and Operated on the Nambe Pueblo

These EPA determinations correctly emphasize that the two chambers in these units are both integral to these operations because they are integrated systems in which solid waste is directly and continuously routed from one part of the process to the next and where that waste is combusted in one or more stages, not independent facilities that can be evaluated separately. The agency's rationale for these decisions was sound, and it applies equally to all pyrolysis/combustion units. As EPA has long recognized, pyrolysis/combustion units are solid waste incineration units. There is no basis for EPA to change this longstanding position.

near Santa Fe, New Mexico (July 7, 2017)); **Ex. S** (Letter from U.S. EPA to eCycling International, LLC (Dec. 22, 2015)); **Ex. T** (Letter from U.S. EPA Region 10 to State of Washington Department of Ecology, "Applicability of 40 C.F.R. § 60 Subpart AAAA to the Green Power, Inc., Facility in Pasco, Washington (Sept. 7, 2010)).

II. The proposal to exclude CISWI from section 129 emission standards "during disaster recovery" is contrary to law and would be arbitrary.

A. The proposal does not comply with Clean Air Act rulemaking requirements in section 307(d).

Section 307(d) of the Clean Air sets a well-established process for rulemaking under the Act to facilitate informed public participation and thereby strengthen EPA's ultimate decisionmaking. *See* 42 U.S.C. § 7607(d). To promote these purposes, Congress required that any proposed rulemaking under the Act include a summary of "the factual data on which the proposed rule is based" and "the methodology used in obtaining the data and in analyzing the data." *Id.* § 7607(d)(3)(A), (B). Congress further required that "[a]ll data, information, and documents" upon which the proposed rule relies "be included in the docket on the date of publication of the proposed rule." *Id.* § 7607(d)(3).

The docket for the Proposed Rule, however, does not appear to contain any data, information, or other documents providing support for this proposal apart from two documents totaling five pages addressing the prior August 2025 Interim Final Rule: a three-page letter from the air curtain incinerator industry (Docket No. EPA-HQ-OAR-2003-0119-2758) and a two-page draft internal EPA memorandum addressing the impact of the Interim Final Rule on small businesses (Docket No. EPA-HQ-OAR-2003-0119-2759), as well as the comments EPA received on that Interim Final Rule, which largely opposed the creation of the temporary use exclusion.

There is no data, information, or other documents in the administrative record providing support for key aspects of the proposal. The administrative record contains no data or information addressing how EPA evaluated the

potential environmental impact or public health effects of the uncontrolled incineration that would be authorized under the proposal or addressing the comparative environmental impact or public health effects of other approaches to managing disaster debris. Although the Proposed Rule asserts that "[d]uring disaster cleanup, frequently there is considerable excess organic waste that, if left, would decompose into more harmful organic air emissions than if combusted or landfilled," 91 Fed. Reg. at 13,554–55, the administrative record contains no data, information, analysis, or other support for this claim.

Likewise, the administrative record contains no data, information, or other documents supporting EPA's contention in the Proposed Rule that additional incineration capacity is necessary to address disaster debris. Although the Proposed Rule asserts that states have requested that "more incinerators . . . be available for disaster cleanup," 91 Fed. Reg. at 13,553, the administrative record contains no data, information, or other documents reflecting such requests from the states.[21] There is no data or information about how the temporary use exclusion provided to OSWI in the 2005 OSWI Rule operates, how much capacity it provides, or why there is a need for additional

[21] The Proposed Rule mischaracterizes a request submitted by the State of North Carolina for regulatory relief related to the use of large capacity air curtain incinerators to manage disaster debris in the wake of Hurricane Helene. *See* 91 Fed. Reg. at 13,554 & n.60. North Carolina merely requested that the use of such air curtain incinerators to address clean vegetative waste from the hurricane be exempt from Title V permitting requirements, and that the Title V exemption apply to both new and existing units and be available for up to one year. Letter from Michael Abraczinskas, N.C. Dep't of Env't Quality, Div. of Air Quality Dir., to EPA (Oct. 24, 2024), https://www.deq.nc.gov/media/46541/download?attachment. North Carolina did not seek any exemptions from opacity standards or other applicable requirements.

capacity. There is no data or information in the administrative record that attempts to address how much capacity is likely to be needed, or even how much capacity currently exists or would exist if the separate proposed regulatory revisions for air curtain incinerators are adopted, which would increase capacity to address "wood wastes, yard wastes, and clean lumber" following natural disasters.

EPA must place the required data, information, and other support in the administrative record and reopen its proposal for public comment so that public participation can be informed by the data EPA believes supports the proposal, as Congress intended and directed in section 307(d) of the Clean Air Act.

B. There is no legal basis in the Clean Air Act to exempt covered incinerators from emission standards "during disaster recovery."

1. Section 129 requires EPA to establish emission standards that apply on a "continuous basis" for all solid waste incineration units.

The Clean Air Act unambiguously requires EPA to promulgate section 129 standards that apply on a "continuous basis" for *all* solid waste incineration units. Section 129 of the Clean Air Act expressly requires EPA to "establish performance standards and other requirements pursuant to section 7411 of this title and this section for each category of solid waste incineration units." 42 U.S.C. § 7429(a)(1)(A). With just four narrowly tailored exceptions, the Act defines "solid waste incineration unit" to mean "a distinct operating unit of any facility which combusts any solid waste material from commercial or industrial establishments or the general public." *Id.* § 7429(g)(1). Read together, as they must be, these provisions make clear that EPA must set section 129 standards for any unit that combusts any solid waste.

The D.C. Circuit has twice confirmed this point in the context of EPA attempts to avoid regulating all commercial and industrial solid waste incinerators (CISWI) under section 129. In *NRDC*, the D.C. Circuit addressed EPA's argument that it could decline to set standards for CISWI units that recover energy from the combustion process. 489 F.3d at 1257–58. The Court found that because the Clean Air Act makes clear that EPA must set section 129 standards for all units that fall within the Act's broad definition of "solid waste incineration unit," EPA's actions contravened the plain meaning of the statute. *Id.* (stating that Congress intended section 129 to require pollution control standards for "*any* facility that combusts *any* commercial or industrial solid waste material *at all*" (emphasis added)).

Next, in *U.S. Sugar*, the D.C. Circuit rejected EPA argument that it could decline to regulate cyclonic burn barrels "given how little information it had on them." 830 F.3d at 644. The Court held that "in light of the unambiguous statutory command to promulgate numeric standards for *all* solid waste incineration units, the EPA had no discretion to avoid regulating any such units—even if its choice to avoid regulating these units would have been otherwise reasonable." *Id.*

Congress also required that the emission standards and limitations established for solid waste incineration units under section 129 of the Clean Air Act apply "on a continuous basis." 42 U.S.C. § 7602(k). This follows from the Act's definition of "emission standard" and "emission limitation." *Id.* Courts have repeatedly held that this statutory language means that emission standards and limitations established under the Act must apply on a continuous basis and assure continuous emission reduction. *See, e.g.*, *Sierra Club v. EPA*, 551 F.3d 1019, 1027–28 (D.C. Cir. 2008); *U.S. Sugar*, 830 F.3d at 607.

Contrary to these plain statutory commands, EPA proposes to afford CISWI units operating in areas with a declared natural disaster a "temporary" exclusion to operate "without the need to comply with" otherwise applicable emission standards and limitations established under section 129 of the Clean Air Act. 91 Fed. Reg. at 13,553. This would be contrary to the requirements contained in the plain text of the Clean Air Act outlined above.

Indeed, the Clean Air Act already reflects Congress's considered judgment on whether to make any exceptions to the broad requirements of section 129. The Act contains four carefully-limited exceptions to its broad definition of covered solid waste incineration units: (1) hazardous waste incinerators regulated under the Solid Waste Disposal Act; (2) "materials recovery facilities … which combust waste for the primary purpose of recovering metals"; (3) "qualifying small power production facilities … or qualifying cogeneration facilities" that combust waste to produce energy; and (4) certain "air curtain incinerators" provided that they only burn clean vegetative waste and comply with opacity limits established by EPA. 42 U.S.C. § 7429(g)(1). Congress thus drew a bright line between solid waste incineration units that must be regulated under section 129 and other units: With four narrow exceptions, EPA must regulate under section 129 *any* unit that burns *any* solid waste from commercial and industrial establishments or the general public, as the D.C. Circuit has expressly and repeatedly recognized. *See NRDC*, 489 F.3d at 1257–58; *U.S. Sugar*, 830 F.3d at 644.

The proposal advanced in the Proposed Rule would contravene these plain statutory requirements by exempting commercial and industrial solid waste incinerators and air curtain incinerators from section 129 requirements "during disaster recovery." EPA's proposal to create additional extra-statutory exceptions to section 129's coverage would contradict the plain text and structure of the Clean

Air Act. "[W]hen the statute's language is plain, the sole function of the courts—at least where the disposition required by the text is not absurd—is to enforce it according to its terms." *Lamie v. U.S. Trustee*, 540 U.S. 526, 534 (2004) (cleaned up). Like the rule at issue in *NRDC*, the proposal in the Proposed Rule would improperly constrict the scope of section 129's broad coverage of commercial and industrial solid waste incineration units.

The proposal would also conflict with Congress's requirement that emission standards and limitations implemented under section 129 apply "on a continuous basis." 42 U.S.C. § 7602(k). The proposal would violate this statutory requirement without legal basis by providing for so-called temporary exemptions from the continuous application of emission limitations for purposes of disaster recovery.

EPA must not finalize this unlawful proposal. As the D.C. Circuit has explained regarding regulatory exemptions from the coverage of section 129 of the Clean Air Act, where Congress did not create an exception, "EPA may not … create an additional exception on its own." *NRDC*, 489 F.3d at 1260.

2. EPA does not have discretion to "delineate" which other categories of solid waste incinerators should have emission standards.

EPA's explanation of why it believes it has legal authority to provide a temporary exclusion from the application of CISWI emission standards begins with its 2005 contention that it had "discretion to delineate" which "other" categories of solid waste incineration units it wanted to regulate under section 129. *See* 91 Fed. Reg. at 13,554 (citing 70 Fed. Reg. at 74,875). In 2005, EPA explained that section 129(a)(1) identifies five categories of solid waste incineration units: "(1) Units with a capacity of greater than 250 [tons per day] combusting municipal waste; (2) Units with a capacity equal to or less than 250 [tons per day] combusting

municipal waste; (3) Units combusting hospital, medical and infectious waste; (4) Units combusting commercial or industrial waste; [and] (5) 'other categories of solid waste incineration units.'" *Id.* Because the Act "specifically describes four of the five listed categories" and leaves the final category "unspecified," EPA asserted it had "discretion to delineate" which incinerators fall within the final category of "other" solid waste incinerators. *Id.* (citing 70 Fed. Reg. at 74,875). Applying this claimed discretion, in 2005, EPA promulgated a final rule for OSWI units that purported to exclude such units from otherwise applicable section 129 emission standards "when they are used on a temporary basis to combust debris during disaster recovery." *Id.* EPA asserts that the current CISWI proposal is "based on the same authority and for the same reasons." *Id.*

This claimed authority fails for two independent reasons. First, contrary to EPA's claims, it does not have authority to decide which categories of OSWI should have emission standards under the Clean Air Act. And second, as discussed further below, even if EPA were correct about its discretion with respect to OSWI, the logic underpinning that claimed discretion to decide which categories of OSWI to regulate would not extend to the CISWI units addressed by the proposal here.

EPA recently discussed its claim to authority to decide which categories of OSWI require regulation. *See* Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Other Solid Waste Incineration Units Review, 90 Fed. Reg. 27,910, 27,927 (June 30, 2025). Ignoring the text of section 129 and the holding in *U.S. Sugar*, EPA argued that *NRDC* is a narrow case that merely directs EPA to set section 129 standards for all *CISWI* and that "Congress left 'the promulgation of standards under section 7411 of this title and this section applicable to other categories of solid waste incineration units' ([Clean Air Act] section 112(a)(1)(e)) [*sic*] up to the Administrator's discretion."

Id. EPA therefore denied that it "is required to establish emissions standards for *all* 'other categories' of solid waste incineration units." *Id.*

EPA's argument ignores the statutory text. Section 129(a)(1)(A) expressly states that EPA must set section 129 standards for "each" category of solid waste incinerator. 42 U.S.C. § 7429(a)(1)(A). Because of this command, "Section 129 on its face applies to 'solid waste incineration units' generally." *NRDC*, 489 F.3d at 1257 (citing 42 U.S.C. § 7429(a)(1)(A)). Moreover, section 129(g)(1) defines incinerator broadly to mean "any" facility that combusts "any" solid waste with just a few carefully tailored exceptions. 42 U.S.C. § 7429(g)(1). That Congress itself considered whether to exclude any categories of incineration units from section 129's broad requirements and chose to exclude only four narrow categories demonstrates that it knew how to craft exclusions when it wished to do so, and "in fact did so for four specific classes of combustion units." *NRDC*, 489 F.3d at 1259.[22] Section 129's broad and unambiguous definition of covered incinerators and mandate to set section 129 standard for each category of incinerator together make clear that EPA must set standards for "*all*" incinerators. *U.S. Sugar*, 830 F.3d at 644. In short, the Act does not leave EPA the "discretion" to decline to set section 129 standards for any incinerators.[23]

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[22] *See also NRDC v. EPA*, 489 F.3d 1364, 1374 (D.C. Cir. 2007) ("Where Congress explicitly enumerates certain exceptions to a general prohibition, additional exceptions are not to be implied, in the absence of a contrary legislative intent." (quoting *TRW Inc. v. Andrews*, 534 U.S. 19, 28 (2001)); *Sierra Club v. EPA*, 294 F.3d 155, 160 (D.C. Cir. 2002) (inferring from the Clean Air Act's inclusion of certain transport-based exemptions from ozone attainment requirements "that the absence of any other exemption for the transport of ozone was deliberate").

[23] Indeed, this is how EPA itself previously understood the scope of section 129. In a prior rulemaking, EPA addressed why it had authority under section 129 to

EPA also misreads *NRDC*. Although that case addressed a refusal by EPA to set section 129 standards for units in a particular category of incinerator, CISWI, its rejection of EPA's view of the law does not turn on the meaning of CISWI. Rather, it rests on the statutory definition of "solid waste incineration unit" as "a distinct operating unit of *any* facility which combusts *any* solid waste material from commercial or industrial establishments or the general public" and Congress's decision to make just four specific exceptions to this definition. 489 F.3d at 1257–58. As the Court explained, the word "any" in this definition has its all-inclusive "usual meaning." *Id.* at 1257 ("The word 'any' is usually understood to be all inclusive." (quoting *Fin. Planning Ass'n v. SEC*, 482 F.3d 481, 488 (D.C. Cir. 2007)). Section 129(g)(1)'s broad definition applies to all incineration units, not just CISWI. Indeed, *NRDC* rejects EPA's attempt to rely on the absence of a specific definition for CISWI precisely because the Act's broader definition of solid waste incineration units made clear that all solid waste incinerators—including all CISWI—are subject to section 129 standards. *Id.* at 1258.

Further, EPA ignores *U.S. Sugar*, which confirms that because EPA has a clear obligation based on this definition "to promulgate numeric standards for *all* solid waste incineration units, the EPA had no discretion to avoid regulating any such units—even if its choice to avoid regulating these units would have been otherwise reasonable." 830 F.3d at 644. Indeed, the court emphasized this point by

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regulate cement kilns burning medical waste. It explained that "[s]ection 129(g)(1) broadly defines solid waste incineration unit as 'a distinct operating unit of *any* facility which combusts *any* solid waste material' … This definition clearly indicates Congress' intent to regulate more than just incinerators because the definition sweeps within its scope any facility that is combusting any solid waste material." 62 Fed. Reg. 48,348, 48,358 (Sept. 15, 1997).

repeating it: "As we have explained, the EPA had a nondiscretionary duty to promulgate standards for *all* solid waste combustion units." *Id.*

Reading section 129 to require EPA to set emission standards for all solid waste incineration units also makes sense given that Congress enacted the 1990 Amendments, including section 129, because it recognized that the previous discretionary regime had failed to result in sufficiently stringent emission standards to make Americans healthy again. *See Sierra Club v. EPA*, 551 F.3d 1019, 1027–28 (D.C. Cir. 2008) (explaining why Congress confined EPA discretion in the 1990 Amendments); *New Jersey v. EPA*, 517 F.3d 574, 578 (D.C. Cir. 2008) ("In 1990, Congress, concerned about the slow pace of EPA's regulation of [hazardous air pollutants], altered section 112 by eliminating much of EPA's discretion in the process.").

Congress itself made the policy decision here regarding which incineration units required emission standards and specifically indicated which units that might otherwise fall within that definition should be excepted. "Here, the statutory definition of 'solid waste incineration unit' is clear and unambiguous as written." *NRDC*, 489 F.3d at 1258. Where Congress did not create an exception, "EPA may not … create an additional exception on its own." *Id.* at 1260. "When the Congress commanded the EPA to regulate units that burn 'any' solid waste, the Congress meant what it said." *U.S. Sugar*, 830 F.3d at 618. EPA's claimed discretion to pick and choose which OSWI units should be regulated is not "the best reading of the statute." *See Loper Bright Enters.*, 603 U.S. at 400. EPA must "effectuate the will of Congress" as expressed by the Clean Air Act's text. *Id.* The proposal to afford CISWI units a temporary exclusion from Clean Air Act emission standards is premised on a mistaken view of the law and should be rejected.

3. Even if EPA were correct that it had discretion with respect to other categories of solid waste incinerators, that discretion would not apply to the commercial and industrial solid waste incinerators that it proposes to exclude from emission standards here.

In any event, even assuming the Clean Air Act were properly understood to confer discretion on EPA to choose which other solid waste incinerators to regulate as OSWI, that would not mean that it also has authority to create discretionary exclusions for the four categories of solid waste incineration units that Congress statutorily specified in the Act, including CISWI units like those EPA proposes to exempt here. Even on EPA's view, these first four categories were "specified" by Congress and therefore fall outside of any discretion EPA may have with respect to OSWI. EPA cannot bootstrap any discretion with respect to OSWI to circumvent Congress's clear requirement to impose continuous emissions limitations on the statutorily specified categories of incinerators.

EPA's own explanation of its statutory authority in the Proposed Rule drives home the internal inconsistencies of this reasoning. As the Rule notes, the Clean Air Act "specifically describes" four categories of incinerators based on the types of waste burned, before turning to the "unspecified" other categories of solid waste incineration units. 91 Fed. Reg. at 13,554. The Rule further explains that EPA asserted "discretion to delineate those 'other' categories of solid waste incineration units" *because* they were not statutorily specified, *unlike* the first four categories. *Id.* But this explanation of why EPA believes that it has discretion to define which categories of OSWI to regulate is flatly inconsistent with *any* claim to discretion in the context of the first four statutorily specified categories, including the CISWI units addressed by the proposal here. EPA claimed that it had discretion with respect to determining which categories of OSWI to regulate precisely because (in

its view) the OSWI category was *unlike* commercial and industrial solid waste incinerators and the other three statutorily defined categories. Basic logic precludes extending that reasoning to find discretion with respect to those four statutorily specified categories. EPA's asserted legal basis in the Proposed Rule thus *contradicts* its authority to issue the proposed temporary use exemption for commercial and industrial solid waste incinerators. But that is the only legal authority EPA identifies for the proposal—"the same authority and for the same reasons" as the prior OSWI rule. *Id.* EPA thus identifies no viable statutory authority for the proposal.

C. The Proposed Rule does not consider alternative approaches to managing disaster debris or address why they are not feasible.

The Proposed Rule fails to adequately consider alternatives to uncontrolled incineration for managing disaster debris or address why those alternative approaches are not feasible. Two self-evident alternatives are (1) incineration of disaster debris with appropriate pollution controls and subject to the protective standards required by the Clean Air Act; and (2) removing demolition debris to appropriate landfills and addressing clean vegetative debris by either chipping it to create mulch or incinerating it in appropriately regulated air curtain incinerators. The proposal contains no meaningful discussion or analysis of these alternatives, including why they are not feasible or would be less desirable than uncontrolled incineration. In addition, although we believe the regulation is unlawful, EPA currently contends that there remains a temporary use exception for OSWI when engaged in disaster recovery. Yet the proposal does not address why these additional resources already available for disaster recovery do not suffice.

Sound decisionmaking requires careful evaluation of all the facts as well as consideration of available alternatives. Section 307(d) of the Clean Air Act

requires the agency to include this factual information in the administrative record at the time of a proposal in order to facilitate informed public participation and ensure that all parties have a chance to make certain that the agency has complete and accurate information before reaching a final decision. Yet here there is no explanation or factual analysis for why incineration would be the only viable option for managing disaster debris. There is no explanation or evidentiary basis for EPA's assumption that the alternatives to incineration would not be reasonable or safe. Nor does the Proposed Rule provide a meaningful explanation or evidentiary support for its assumption that incineration with appropriate pollution controls would not be feasible. Nor is there any evidence in the record that uncontrolled incineration of disaster debris poses less of a threat to public health and safety than alternative approaches to disaster recovery. Instead, the proposal assumes without support that uncontrolled incineration is the only option and that existing options for incineration would not be sufficient.

Before proceeding with this alternative, EPA must gather the information necessary to reach a fully informed decision, publish that data, and reopen this issue for public comment on the data the agency is relying upon, as the Clean Air Act requires. Otherwise, the agency's failure to consider significant alternatives and provide a reasoned explanation for the alternative selected would be arbitrary and capricious. *See Allied Local & Reg'l Mfrs. Caucus v. EPA*, 215 F.3d 61, 80 (D.C. Cir. 2000) (An agency's failure to "consider significant alternatives to the course it ultimately cho[se]" is a telltale sign that its decision-making process cannot "be regarded as rational."); *Yakima Valley Cablevision, Inc. v. FCC*, 794 F.2d 737, 746 n.36 (D.C. Cir. 1986) ("The failure of an agency to consider obvious alternatives has led uniformly to reversal."); *Int'l Ladies' Garment Workers' Union v. Donovan*, 722 F.2d 795, 815 (D.C. Cir. 1983) (An agency's "failure to consider

… alternatives" and "to explain why such alternatives were not chosen" is "arbitrary and capricious."); *Spirit Airlines, Inc. v. DOT,* 997 F.3d 1247, 1255 (D.C. Cir. 2021). Without meaningful consideration and analysis of alternative approaches to managing disaster debris supported by data in the record at the time of the proposal, finalizing this proposal would be arbitrary and capricious.

D. The evidence in the administrative record does not support the need for additional incineration capacity for the purpose of managing disaster debris or show that such an approach would be environmentally preferable. [Emergency-1]

It is axiomatic that agency rules must be supported by the evidence before the agency during the rulemaking process and that there must be a rational connection between the facts found by the agency and the its ultimate decision. Here EPA has provided no factual support for its proposal. Here the administrative record contains no evidence that incineration is the best approach to managing disaster debris or that there is not currently sufficient waste management capacity, such as mulching, composting, chipping or reusing the organic green waste as a soil amendment and landfill capacity. Indeed, the administrative record contains no evidence even that there is not already sufficient *incineration* capacity to address any disaster-related needs even if that were the best approach. Nor is there any evidence in the record that uncontrolled incineration of disaster debris poses less of a threat to public health and safety than other approaches to waste management and recovery.

As discussed above, the rulemaking provisions of the Clean Air Act require that any proposal to promulgate Clean Air Act regulations include a "statement of basis and purpose" that includes a summary of "the factual data on which the proposed rule is based" and "the methodology used in obtaining the data and in

analyzing the data." 42 U.S.C. § 7607(d)(3). Furthermore, "[a]ll data, information, and documents" on which the proposed rule relies must be "included in the docket on the date of publication of the proposed rule." *Id.* Here, the docket for the Proposed Rule provided on the date of publication[24] contains little to no supporting evidence for EPA's proposal. The only recent information the docket contains are a few materials related to the 2025 Interim Final Rule addressing disaster cleanup: one three-page letter from the air curtain incinerator industry (Docket No. EPA-HQ-OAR-2003-0119-2758); a two-page draft internal EPA memorandum addressing the impact of the Interim Final Rule on small businesses (Docket No. EPA-HQ-OAR-2003-0119-2759); and the comments received on the Interim Final Rule. EPA should develop an appropriate evidentiary record for its proposal, publish that data and information, and reopen this proposal for further public comment informed by EPA's asserted support.

In particular, the rationale for the proposal to provide a temporary use exception for CISWI engaged in disaster cleanup is based on several unsupported premises. Specifically, that (1) there is not sufficient incineration capacity now to properly address disaster debris and so more capacity is needed; (2) that the only way to ensure a sufficient increase in capacity is to authorize incineration without pollution controls; and (3) that uncontrolled incineration is preferable to other approaches to managing disaster debris, either because it is less environmentally harmful or alternative approaches are not feasible. But the cursory administrative record reflects a dearth of empirical support for any of these claims. Even the agency's primary rationale for the proposal—that states have requested additional incineration capacity to address all forms of disaster debris, *see* 91 Fed. Reg.

[24] As reflected on the docket on regulations.gov, where "[a]ll documents in the docket are listed." 91 Fed. Reg. at 13,544.

at 13,553—is entirely unsupported by any evidence in the record even though presumably documents from states making such requests would not be difficult to identify or produce.

The only state request specifically identified by EPA (which is cited in the Proposed Rule but has not been added to the docket for the administrative record on regulations.gov) does not align with EPA's proposed regulatory revisions. The only evidence whatsoever of any need for additional incineration capacity for disaster cleanup specifically identified by the Rule is a request made by the State of North Carolina for an exemption from Title V permitting requirements for air curtain incinerators with a capacity larger than 35 tons per day that combust "significant volumes of wood wastes, yard wastes, and clean lumber resulting from substantial damage caused by Hurricane Helene."[25] But this request did not ask for authority to use incinerators on "demolition" debris resulting from disasters—manmade structures and objects "destroyed, broken, or discarded as a result of a disaster or emergency," 91 Fed. Reg. at 13,555—which is sensible because the incineration of such materials is highly likely to result in harmful emissions, *see* Part II.E.1, *infra*. Instead, this request for a permitting exemption was limited only to the use of large capacity air curtain incinerators on "wood wastes, yard wastes, and clean lumber" (collectively, "clean vegetative waste"). North Carolina's request also did not seek to exempt such units from opacity standards or other applicable requirements.

[25] Letter from EPA to N.C. Dep't of Env't Quality regarding No Action Assurance for the Use of Air Curtain Incinerators to Manage Debris Caused By Hurricane Helene in North Carolina, at 1 (Nov. 21, 2024), https://www.deq.nc.gov/media/46792/download?attachment [https://perma.cc/LG2M-GKBL].

The combustion of clean vegetative waste does not pose the same threat to public health and the environment as the combustion of demolition debris. But EPA's proposed regulatory revision (in contrast to North Carolina's request) is not limited to incineration of clean vegetative waste but instead would authorize combustion of demolition debris without any pollution controls. There is no evidence whatsoever in the record that such incineration capacity is needed or that incinerating demolition debris is preferable—from any environmental or public health standpoint—to other approaches to managing it. EPA should not finalize this proposal in the absence of such evidence, presented and vetted through a public comment process.

The nature of the State of North Carolina's request highlights another question the Proposed Rule did not address. The proposal does not explain why the proposed changes regarding CISWI remain necessary in light of the other changes that the Rule also proposes with respect to the regulation of air curtain incinerators.

As noted above, the only specific request identified by EPA was a request for an exemption from Title V permitting requirements for large capacity air curtain incinerators combusting clean vegetative waste following Hurricane Helene. The use of large capacity air curtain incinerators on clean vegetative waste would already be authorized under the Proposed Rule's separate proposal to consolidate regulations for air curtain incinerators in a separate subpart of the regulations, if adopted. *See* 91 Fed. Reg. at 13,544–53. Given that these proposed changes to the regulation of air curtain incinerators, if adopted, would already address any need for additional capacity to manage clean vegetative waste following a natural disaster identified in the administrative record, it is unclear what additional need for capacity the proposal regarding CISWI is intended to

address. The absence of any evidence of need is particularly concerning given that the CISWI proposal is almost certain to result in highly toxic air emissions.

Ultimately, we do not believe there is support for the need to increase incineration capacity by allowing uncontrolled incineration of disaster debris by CISWI units. But at a minimum, to show that such capacity is needed, the agency would need to provide support for its claim that existing options collectively do not provide adequate capacity to properly manage disaster debris. These existing options include (1) appropriate use of landfills; (2) incineration of wastes in compliance with existing section 129 emission standards; (3) chipping clean vegetative waste for use as mulch; (4) temporary use of OSWI under existing authorities, as authorized by the 2005 OSWI Rule (although we believe such use remains unlawful); and (5) use of air curtain incinerators, including ones with large capacity, to combust clean vegetative waste resulting from natural disasters—as would be authorized under the proposed regulatory revisions for air curtain incinerators (appropriately modified as we propose below, *see* Part III, *infra*). We do not believe that there is evidence to make such a showing on all these points, but certainly the current administrative record does not provide such support. If EPA plans to continue with this proposal, it must provide this evidence and reopen the proposal for public comment in light of the agency's claimed support.

E. The Proposed Rule does not address several important aspects of providing a temporary use exclusion to commercial and industrial solid waste incinerators to combust disaster debris without emission controls.

The Proposed Rule entirely fails to address several important aspects of the problem posed by the management of disaster debris. The Proposed Rule does not reflect a meaningful effort to understand and evaluate the environmental consequences of allowing uncontrolled combustion of disaster debris. There is no attempt to determine or analyze the likely make-up of the debris that might be combusted following a natural disaster, no proposal to take steps to identify and segregate hazardous materials likely to be intermingled in such debris, no analysis of the type of emissions likely to result from uncontrolled incineration of disaster debris, no analysis of existing scientific research on uncontrolled incineration of demolition debris (including the EPA's own 2016 study, *see* Part II.E.3, *infra*), no evaluation of how uncontrolled incineration of disaster debris might affect attainment of national ambient air quality standards, no assessment of how the length of uncontrolled incineration of disaster debris might exacerbate environmental impacts, and no effort to evaluate how uncontrolled incineration of disaster debris will affect threatened or endangered species and their critical habitat. Careful evaluation of these considerations is crucial to sound decision-making on the proposal to "temporarily" allow uncontrolled incineration of disaster debris, excluding this CISWI units from otherwise applicable emission standards. EPA must develop a full factual record based on the available science on these issues, make that data available to the public, and reopen the proposal for public comment before reaching any final decision on the proposal.

1. The Proposed Rule does not address the likely make-up of disaster debris.

The Proposed Rule does not reflect any effort to evaluate the likely contents of disaster debris and what that composition might mean for potential emissions from its uncontrolled incineration. This question is critical to meaningfully evaluating the environmental risks posed by the proposed uncontrolled incineration of disaster debris.

Even if one were to make the dubious assumption that hazardous materials will be effectively identified and segregated from any other disaster debris incinerated under this proposal, it is highly likely that the sort of debris that results from natural disasters will include materials that will create harmful and toxic emissions when incinerated. Consequently, before authorizing the uncontrolled incineration of disaster debris, it is critical that EPA analyze the likely contents of disaster debris and evaluate the harmful emissions likely to result from its incineration.

Debris from major disasters in residential areas will almost certainly include finished and treated wood products, insulation materials, fire retardants including possible asbestos, electric vehicles, and the contents of buildings, such as furniture, consumer electronics, and other artificial materials. Debris from commercial and industrial areas likely contains materials that would produce even more toxic emissions when burned. Given the nature of the disasters that would trigger the exemption, such materials would likely be inextricably intermingled with other disaster debris and would be difficult to identify and even harder to segregate.

This is borne out by EPA's own findings regarding the burning of demolition debris. Following Hurricane Katrina, EPA undertook a study of the

emissions that resulted from combusting demolition debris from the natural disaster in an air curtain incinerator. *See* EPA, *Managing Debris after a Natural Disaster: Evaluation of the Combustion of Storm-Generated Vegetative and C&D Debris in an Air Curtain Burner: Source Emissions Measurement Results* (2016) ("EPA Air Curtain Incinerator Study"), attached as **Ex. U**; *see also* **Ex. V** (containing 2008 materials relating to study planning). EPA's study found that allowing air curtain incinerators to burn demolition debris instead of just vegetative waste causes their emissions of metals, dioxins/furans, polyaromatic hydrocarbons (PAH) and other highly toxic pollutants to increase dramatically—in some instances by orders of magnitude. *See* EPA Air Curtain Incinerator Study, **Ex. U,** at Chapter 5. Unfortunately, in the Proposed Rule, EPA is ignoring its own findings that burning demolition debris that is classified as non-hazardous vastly increases toxic air pollution.

The sparse administrative record for the Proposed Rule does not contain any factual information about the likely composition of the disaster debris proposed to be combusted without pollution controls, and the Rule makes no meaningful effort to assess the likely emissions associated with such uncontrolled incineration informed by an evidence-based assessment of the likely composition of the covered debris. In order to avoid arbitrary decisionmaking, these critical issues must be analyzed and EPA's conclusions opened up to public comment.

2. The Proposed Rule does not address how disaster debris containing hazardous materials will be identified and segregated.

The Proposed Rule also does not reflect any effort to address the high likelihood that hazardous materials will be intermingled with the debris resulting

from natural disasters in a manner that is difficult to detect or segregate. But it is almost certain that disaster debris will contain some hazardous materials.

There are numerous sources of hazardous materials that may become imbricated within disaster debris, including mercury and other materials from thermometers and fluorescent or compact fluorescent bulbs; painting supplies such as paints, paint thinners, acetone, polishes, stains, and varnishes; aerosols; automotive supplies such as antifreeze, transmission fluids, gasoline, and motor oils; traditional and rechargeable batteries; household cleaners including ammonia and bleach products; lawn care products including fungicides, herbicides, insecticides, and pesticides; electronics waste; lithium batteries and electric cars; resins in treated lumber; and propane and propane tanks. To the extent that the disaster strikes in commercial or industrial areas, the amount of co-mingled hazardous debris could be even worse. The "tornado[s], hurricane[s], flood[s], ice storm[s], high winds, or act[s] of bioterrorism" the proposal is intended to address, 91 Fed. Reg. at 13,555, will not carefully avoid intermingling such hazardous materials among other disaster debris.

Incinerating these hazardous materials without pollution controls would be unlawful and would result in highly toxic emissions that threaten public health and the environment. But the pressure to clean up and begin redevelopment following natural disasters makes it likely that, absent careful mechanisms to detect and segregate hazardous materials, such materials will be improperly included in the materials incinerated. Indeed, even in tightly regulated clean-up efforts like those following the recent wildfires in southern California, air quality monitoring during clean-up efforts showed dangerously heightened levels of asbestos, beryllium, lead, vanadium, cadmium, and chromium above normal background levels because of mismanagement of disaster debris. *See* Williams Decl., **Ex. E** ¶ 15–22.

While the Proposed Rule purports to limit the proposal to allow uncontrolled disaster debris incineration to "non-hazardous materials" that are "the remains of something that was destroyed, broken, or discarded as a result of a disaster or emergency," 91 Fed. Reg. at 13,555, simply saying that does not make it so. But the Proposed Rule does not address the risks presented by the potential presence of hazardous materials intermingled with disaster debris[26] and contains no mechanism to ensure that the debris gathered and burned does not, in fact, include hazardous materials. It is critical that any proposal that would authorize the incineration of debris resulting from natural disasters include an effective mechanism to provide assurance that any hazardous materials intermingled with the debris are identified and segregated before combustion occurs, and that incineration does not occur (or takes place in appropriately regulated hazardous material facilities) when such materials are inextricably intertwined in the debris.

In addition, the inclusion of "bioterrorism" disasters in the scope of the Proposed Rule is particularly troublesome. Debris following a bioterrorism disaster may well include dangerous/infectious biological material. There is no evidence in the record that incineration without pollution controls would suffice to render such debris safe. Incineration could even serve to distribute such materials more widely through the air, exacerbating the emergency.

[26] It is troubling that EPA failed to recognize and consider this important issue given that EPA previously recognized the dangers associated with uncontrolled burning of materials containing asbestos in air curtain incinerators in preparation for its pilot study following Hurricane Katrina. *See* **Ex. V** (June 23, 2008, response to comments on the Disaster Debris Reduction Pilot Project – St. Bernard Parish following Hurricane Katrina).

3. The Proposed Rule does not address the likely emissions impact of uncontrolled combustion of disaster debris or consider existing scientific research on such emissions.

At the most fundamental level, EPA failed to meaningfully evaluate a core aspect of the problem presented by uncontrolled incineration of disaster debris: EPA did not attempt to determine or evaluate the likely emissions that will result from the uncontrolled incineration authorized by the Interim Final Rule or whether those emissions will be harmful. EPA did not attempt to estimate the likelihood or extent of harmful emissions of air pollutants from the uncontrolled incineration of disaster debris or to establish that the alleged harmful environmental effects of alternative approaches outweighed the harmful environmental effects of uncontrolled incineration.

The sparse administrative record reflects no attempt to assess, based on factual evidence, what those emission consequences might look like. Instead EPA simply asserts, without providing any empirical support, that "in emergency situations, quick removal of debris is of utmost importance to maintain public health and safety," 91 Fed. Reg. at 13,555 (citing 70 Fed. Reg. at 74879), and assumes without further analysis that incineration in units that do not have to meet any emission standards or monitoring requirements is the only option for quick removal. These are empirical questions that should be supported with evidence.

EPA asserts that it is making this proposal "for the same reasons" that it promulgated the 2005 OSWI Rule. 91 Fed. Reg. at 13,554. And the sparse administrative record for the Proposed Rule shows that EPA in fact did not consider any new performance test data, scientific research, or other factual information developed since 2005 in its decision. But agency proposals in 2026

should consider the most up-to-date evidence available rather than relying on stale information that is more than two decades old.

Importantly, there has been considerable scientific research into emissions from combustion of solid waste and how it impacts air quality since 2005. This includes research by EPA itself and by other federal agencies and state environmental and natural resources agencies on emissions from incinerating demolition debris and other waste in air curtain incinerators like those currently operating as CISWI. Following Hurricane Katrina, EPA conducted its own pilot study into the use of air curtain incinerators to combust demolition debris. *See* **Ex. U** (EPA Air Curtain Incinerator Study). This 2016 study showed that allowing air curtain incinerators to burn demolition debris instead of clean vegetative waste causes their emissions of metals, dioxins/furans, polyaromatic hydrocarbons and other highly toxic pollutants to increase dramatically—in some instances by orders of magnitude. *Id.* Chapter 5.

But the Proposed Rule does not even mention this EPA study, much less analyze these potential harmful effects of authorizing uncontrolled incineration of demolition debris and explain why those concerns might be outweighed by other considerations. The proposal instead simply ignores this information—that is, the findings from EPA's own research—and assumes with no evidentiary support whatsoever that the toxic emissions from uncontrolled incineration of demolition debris in CISWI units would be comparable to incineration in other facilities.[27]

[27] EPA also fails to discuss performance testing of air curtain incinerators by state and federal agencies conducted since 2005 that suggest uncontrolled incineration of disaster debris in such incinerators may result in considerable increases in harmful emissions. *See* **Ex. W** (*infra* note 35); **Ex. X** (*infra* note 36).

Proposed regulatory revisions should not rest on stale science or willful blindness to available empirical evidence. EPA must carry out a serious evaluation of available data regarding the potential for harmful emissions from uncontrolled incineration of demolition debris. If, after doing so, the agency remains inclined to recommend this proposal, it must publish that data, explain why uncontrolled incineration of disaster debris remains the agency's preferred approach, and reopen the proposal to public comment informed by this purported support.

4. The Proposed Rule does not address how uncontrolled combustion of disaster debris might affect attainment of national ambient air quality standards.

The Proposed Rule also does not take into account how uncontrolled incineration of disaster debris might impact ambient air quality, including whether it would likely result in exceedances of National Ambient Air Quality Standards. But given background levels of ambient air pollution it is likely that permitting uncontrolled incineration of disaster debris will result in air quality that threatens public health and safety in light of EPA's own air quality standards.

In particular, EPA's proposal to exempt large-capacity air curtain incinerators from applicable emission standards would have significant implications for areas recovering from natural disasters such as southern Appalachia, a region that continues to rely on such incinerators to dispose of the enormous amount of debris left in the wake of Hurricane Helene. It is possible that using air curtain incinerators equipped with appropriate pollution controls to dispose of vegetative material might be a better alternative to open burning. But such operations would still pose considerable risk to public health—especially if they are not well regulated or used to burn non-vegetative disaster debris. Once again, these empirical questions remain entirely unaddressed in the administrative

record. There is no data, information, or other evidence in the record here about the relative merits of using air curtain incinerators on clean vegetative wastes.

These risks to public health are underscored when placed in the context of existing ambient air quality. In most areas of the country, material use of air curtain incinerators for disaster recovery as proposed would likely cause or contribute to exceedances of the primary annual National Ambient Air Quality Standards (NAAQS) for fine particulate matter ($PM_{2.5}$).

The Clean Air Act requires EPA to adopt a primary NAAQS for each criteria pollutant, including $PM_{2.5}$, by establishing a maximum ambient concentration that EPA determines "is requisite to protect the public health," while allowing for "an adequate margin of safety."[28] Exposure to concentrations of air pollutants above these standards is presumptively unhealthy. Exposure to $PM_{2.5}$ pollution is known to have a "causal relationship" with mortality, primarily due to its effects on the cardiovascular and respiratory systems.[29] In addition to being deadly for certain individuals, $PM_{2.5}$ exposure can cause nonfatal heart attacks, decrease lung function, and aggravate respiratory conditions such as asthma and irritation of the airways.[30] In fact, there is no safe exposure level for $PM_{2.5}$. In spite

[28] 42 U.S.C. § 7409(b)(1); *see also* 40 C.F.R. § 50.2(b) (2024) ("National primary ambient air quality standards define levels of air quality which the [EPA] Administrator judges are necessary, with an adequate margin of safety, to protect the public health.").

[29] *See* Reconsideration of the National Ambient Air Quality Standards for Particulate Matter, 89 Fed. Reg. 16,202, 16,224–25, 16,277 (Mar. 6, 2024).

[30] *Health and Environmental Effects of Particulate Matter (PM)*, EPA (May 23, 2025), https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm.

of this significant risk, EPA proposes to exempt significant sources of $PM_{2.5}$ emissions from applicable emission standards, including those for particulates.

The harm that would result from such uncontrolled incineration is not theoretical or speculative. Recent air dispersion modeling shows there is a significant risk that large air curtain incinerator operations will cause NAAQS exceedances—including exceedances of the primary annual NAAQS for $PM_{2.5}$, which was recently revised to 9.0 micrograms per cubic meter ($\mu g/m^3$).[31] In the spring of 2024, the U.S. Forest Service conducted air dispersion modeling in support of an application to operate a large-capacity air curtain incinerator in Washington State. Despite using a 500-foot buffer area based on the manufacturer's "safety recommendations," the screening-level modeling predicted exceedances of the NAAQS for $PM_{2.5}$, PM_{10}, and NO_2.[32] For purposes of evaluating compliance with the primary annual NAAQS for $PM_{2.5}$, the model predicted the impact from one air curtain incinerator alone (i.e., not including background concentrations) was between 2.7 $\mu g/m^3$ (for flat terrain) and 5.2 $\mu g/m^3$ (for complex terrain).[33] Notably, this modeling predicted that maximum $PM_{2.5}$ impacts would occur "at the end of the safety distance (500 feet or 152.4 meters)"

[31] 40 C.F.R. § 50.20(a); 89 Fed. Reg. at 16,202.

[32] U.S. Forest Serv., *Buttermilk Creek Revised Modeling Report* at 6–9 (Feb. 7, 2024). A copy of this "screening-level" modeling report is included for reference as **Ex. W**.

[33] *See id.* at tbl.4 (flat terrain scenario) and tbl.5 (complex terrain scenario). These tables show total $PM_{2.5}$ concentrations that include a background concentration of 4.4 $\mu g/m^3$; we therefore calculate impacts from the ACI of 2.7 $\mu g/m^3$ (for flat terrain) and 5.2 $\mu g/m^3$ (for complex terrain).

for the flat terrain scenario, and even farther away—359 meters, or 1,178 feet—for the complex terrain scenario.[34]

The U.S. Forest Service's screening-level modeling relied on emission factors derived from the results of recent performance testing for large-capacity air curtain incinerators, which was conducted by the Oregon Department of Environmental Quality in the spring of 2023.[35] But even when the U.S. Forest Service performed a "refined" modeling analysis using a much less conservative emission factor for $PM_{2.5}$—which was derived from tests conducted on a small-capacity air curtain incinerator in 2002[36] and an air curtain incinerator of unknown capacity in 2003[37]—the Service determined "it was not possible to demonstrate compliance with the NAAQS using the maximum material processing rate of 15 tons/hour."[38] After running another model using the less conservative emission factor combined with a lower throughput rate, the resulting modeled $PM_{2.5}$ impact was 2.55 $\mu g/m^3$.[39]

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[34] *Id.* at 7–8.

[35] *See Air Curtain Incinerator Emission Testing*, Or. Dep't of Env't Quality, https://perma.cc/576Q-2VYM, attached as **Ex. X**.

[36] U.S. Forest Serv., *Refined Modeling Analysis for Buttermilk Creek Carbonator Project*, 7 (Mar. 11, 2024) (describing a performance test conducted by the U.S. Department of Agriculture in October 2002 "using an Air Curtain Model S-217 ACI, having a capacity of 6 tons per hour). A copy of this "refined" modeling report is included for reference in **Ex. W**.

[37] *Id*. (describing a performance test conducted by the U.S. Department of Agriculture in June 2003 "using a McPherson Model M30 ACI," and noting that "[t]he burn rate of the unit was not identified").

[38] *Id.* at 7.

[39] *Id.* at 10 tbl.8.

Notably, before reducing the throughput rate, the U.S. Forest Service's 2024 modeling analysis revealed exceedances of the primary annual NAAQS for $PM_{2.5}$—even when using outdated emission factors—despite the fact that the background concentration was determined to be just 4.4 $\mu g/m^3$.[40] In contrast, EPA's compilation of certified 2024 monitoring data shows that the vast majority (over 95%) of U.S. counties have a background $PM_{2.5}$ concentration that exceeds 4.4 $\mu g/m^3$.[41] In fact, even using the lowest, least conservative modeled impact from the U.S. Forest Service's 2024 analysis (2.55 $\mu g/m^3$), large air curtain incinerator operations in over 77% of all U.S. counties would likely cause or contribute to a NAAQS violation based on those counties' background concentrations.[42]

This risk would be exacerbated by EPA's proposed exemption of such units from emission standards. Allowing large-capacity air curtain incinerators to operate without complying with applicable emissions standards could contribute to NAAQs exceedances for $PM_{2.5}$ and resulting harm to human health in communities recovering from natural disasters. For example, this practice could cause such exceedances in western North Carolina communities, which are still recovering from the devastating impacts of Hurricane Helene. Regulatory air monitors are located in Asheville[43] and Hickory,[44] North Carolina. These areas are similar to the

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[40] *Id.* at 11 tbl.9.

[41] *See* EPA, *PM2.5 Design Values, 2024 (xlsx)*, at tbl.4a (June 3, 2025), https://www.epa.gov/system/files/documents/2025-06/pm25_designvalues_2022_2024_final_05_28_25.xlsx (showing that 519 of the 541 listed counties have a 2022–2024 design value of 4.5 $\mu g/m^3$ or higher).

[42] *See id.* (showing that 419 of the 541 listed counties have a 2022–2024 design value of 6.5 $\mu g/m^3$ or higher).

[43] AQS Site ID 37-021-0034.

[44] AQS Site ID 37-035-004.

complex terrain scenario in Washington State's air dispersion modeling because they are both in the foothills of the Blue Ridge Mountains. Adding the predicted impact for complex terrain (5.2 µg/m^3) to the current $PM_{2.5}$ background concentration at the air monitoring site in Asheville, North Carolina shows that the operation of just one ACI would result in ambient $PM_{2.5}$ concentrations of 11.3 µg/m3.[45] Similarly, in Hickory, North Carolina, the operation of just one ACI would result in ambient $PM_{2.5}$ concentrations of 13.3 µg/m3.[46] Both of these values far exceed the primary annual NAAQS for $PM_{2.5}$, meaning communities in these areas would be exposed to levels of air pollution that is presumptively unhealthy—and potentially deadly.

To undertake a meaningful evaluation of the risks posed by this proposal, EPA must consider how the uncontrolled incineration of disaster debris would build on background levels of air pollution, thus degrading ambient air quality, including the likelihood that it would lead to harmful exceedances of appliable NAAQS, and consider the scientific evidence of how air curtain incinerator use impacts ambient air quality.

5. The Proposed Rule does not address the discrete and unique potential harms of allowing uncontrolled incineration of disaster debris by portable air curtain incinerators.

Even if an air curtain incinerator is large capacity, it may nonetheless be portable. Although the Proposed Rule sensibly makes clear that any CISWI units

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[45] *See* EPA, *PM2.5 Design Values, 2024 (xlsx)* at tbl.5a (last updated June 3, 2025), https://www.epa.gov/system/files/documents/2025-06/pm25_designvalues_2022_2024_final_05_28_25.xlsx (showing certified 2022–2024 design values for each $PM_{2.5}$ monitoring site in Column M).

[46] *Id.*

temporarily employed to incinerate disaster debris must have a Title V permit, *see* Part II.K., *infra*, it is unclear whether any of those permits currently, or in the future, will authorize relocation of any large capacity air curtain incinerators temporarily used to incinerate disaster debris. This potential portability raises significant questions of public health and environmental impact not considered in the Proposed Rule. Temporary use of such large capacity air curtain incinerators "on site" for disaster recovery could have significant localized emission impacts. Unlike permanently situated incineration facilities, when the impact on the local environment should be considered in the permitting process, this proposal would effectively authorize large-scale uncontrolled incineration directly in residential neighborhoods and other heavily populated areas. The proximity of these harmful emissions to large populations increases the risk of problematic public health effects, particularly for individuals with pre-existing conditions that make them susceptible to respiratory health issues. EPA must evaluate the discrete and unique harmful impacts on public health and the environment that such large-scale, onsite incineration might cause. As discussed below, if this proposal is adopted, EPA should require that any CISWI units operating pursuant to a temporary use exclusion operate at their fixed, permitted location (or, if the permit does not require a specific location, at their primary place of operation).

6. The Proposed Rule does not address the effects of potentially indefinite uncontrolled combustion of disaster debris.

EPA purports to propose authorizing "temporary use" of CISWI and large-capacity air curtain incinerators to burn disaster debris. But in light of the indefinite nature of most disaster declarations and the limited constraints in the proposal for continued uncontrolled incineration without any time limitations, the Rule as proposed would authorize what is effectively indefinite license to continue

uncontrolled incineration in many locations in the United States. Specifically, the proposal would allow uncontrolled burning of these wastes for up to eight weeks without notice to anyone, for an additional eight weeks with notice to the permitting authority, and indefinitely with the permitting authority's approval. 91 Fed. Reg. at 13,556. The indefinite nature of this proposed authorization would be further exacerbated by the fact that there is often no mechanism and little incentive to terminate disaster declarations. And for major disasters clean up efforts may extend for years. For example, clean up from Hurricane Helene in North Carolina is not expected to be completed for another ten years.

The preamble to EPA's Proposed Rule misleadingly suggests the proposed exemption would be temporary but the actual proposal would effectively allow covered incinerators to operate indefinitely without meeting emission standards or obtaining a permit. Thus, the proposal would allow and encourage long-term uncontrolled incineration of disaster debris. Any proposal should be modified to require prior approval by EPA or appropriate state regulators before uncontrolled incineration of disaster debris commences and should limit such uncontrolled incineration to four weeks or less to minimize the negative impact of uncontrolled incineration on public health and the environment.

7. The Proposed Rule does not address the potential effect of uncontrolled combustion of disaster debris on threatened and endangered species and their critical habitat.

Finally, the Proposed Rule does not reflect that EPA evaluated the likely effects of uncontrolled incineration of disaster debris on threatened and endangered species or their critical habitat. EPA must undertake consultation with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service under section 7 of the Endangered Species Act for any agency action that may affect endangered or

threatened species or their habitat. *See* 16 U.S.C. § 1536. Uncontrolled incineration of disaster debris will result in the release of harmful and likely toxic emissions that could reasonably be expected to affect and potentially jeopardize listed species when released in the vicinity of critical habitat. EPA's proposal here does not contain any consideration of the threat posed by uncontrolled incineration to listed species much less impose the sorts of restrictions that would be necessary to protect critical habitat of listed species. These steps must be taken before the proposal can be finalized.

F. The Proposed Rule does not provide a mechanism to ensure any hazardous materials intermingled with disaster debris are identified and segregated before the materials are incinerated.

As discussed above, the Proposed Rule does not include any mechanism to identify hazardous materials that are intermingled within disaster debris and ensure that they are segregated before incineration occurs. But disaster debris, and in particular debris from demolished residential, commercial, and industrial buildings, is highly likely to include some hazardous materials. The average residence contains numerous potential sources of hazardous materials. As outlined above, this includes mercury and other materials from thermometers and fluorescent or compact fluorescent bulbs; paint supplies such as paints, paint thinners, acetone, polishes, stains, and varnishes; aerosols; automotive supplies such as antifreeze, transmission fluids, gasoline, and motor oils; batteries and rechargeable batteries; household cleaners including ammonia and bleach products; lawn care products including fungicides, herbicides, insecticides, and pesticides; electronics waste; resins in treated lumber; and propane and propane tanks. Commercial and industrial buildings likely contain these and more potential sources of hazardous materials. Following natural disasters like tornadoes, hurricanes, wildfires, and

floods, such hazardous materials may be inextricably intertwined with other demolition debris in a manner that makes it difficult to identify and harder to segregate.

The incineration of hazardous materials without appropriate pollution controls would create extremely toxic emissions. In addition, combustion of hazardous waste without proper emission controls would also violate the Resource Recovery and Conservation Act. There is significant pressure to complete disaster clean up and begin redevelopment following natural disasters. In those circumstances, in the absence of any regulatory mechanism to ensure that such hazardous materials are identified and segregated (or, if the hazardous materials are inextricably intertwined in the debris, diverted to appropriate treatment elsewhere), there is a significant risk that hazardous materials will be incinerated along with other demolition debris without pollution controls. *See* Williams Decl., **Ex. E** ¶ 15–22. Although we are opposed to the proposal to include a temporary use exemption for CISWI units involved in disaster clean up, any regulatory revision to create such an exemption must include measures adequate to ensure that hazardous materials intermingled in disaster debris are not incinerated without appropriate emission controls.

G. The Proposed Rule does not provide for adequate public notice of when and where uncontrolled incineration of disaster debris will occur.

Uncontrolled incineration of disaster debris, and especially demolition debris resulting from natural disasters, is likely to result in significant emissions of harmful air pollutants, including particulate matter. Some air curtain incinerators are portable and would be authorized under the proposal to undertake uncontrolled incineration of disaster debris directly in locations where people live, work, and play. The harmful emissions resulting from uncontrolled incineration of disaster debris could have significant and deleterious public health effects, particularly for individuals with pre-existing conditions that makes them susceptible to respiratory illnesses or otherwise vulnerable to the harmful air pollutants likely to be emitted.

Yet, as it currently stands, the proposal does not provide any mechanism to inform the public when and where uncontrolled incineration of disaster debris will be occurring. Instead the proposal would allow operators to undertake up to eight weeks of uncontrolled incineration of disaster debris with no notice whatsoever either to the public or to federal and state regulators, and another eight weeks without approval simply upon providing notice to the EPA, again with no mechanism to inform the general public.

If this proposal were adopted, members of the public would have a significant interest in being informed when and where uncontrolled incineration of disaster debris would be occurring, particularly if such incineration might be undertaken directly in the neighborhoods where they live, work, and recreate. Members of the public may want to take steps to protect their health, including closing windows, avoiding time outdoors, increasing air filtration indoors, avoiding locations they might otherwise frequent, or even relocating to avoid

exposure to the harmful air pollutants likely to be produced. This is particularly so for individuals who may have specific health concerns, either for themselves or vulnerable family members, where exposure to certain air pollutants may have significant and deleterious effects on their health. The proposal as it stands leaves these people to suffer these negative health effects unaware, disempowered to take the steps necessary to protect themselves and their loved ones.

Although we oppose this proposal, any regulatory revision that would authorize uncontrolled incineration of disaster debris, including demolition debris, must provide for adequate and advance public notice before such incineration takes place. This is necessary to allow for appropriate public education and to allow individuals to take the steps they find necessary to protect themselves and their loved ones. Before undertaking uncontrolled incineration of disaster debris, operators should be required to provide appropriate public notice including the location where the incineration will take place, the nature of the debris to be combusted, the anticipated duration of the incineration efforts, and the times of day when the incineration efforts will be operational. This notice should be required in appropriate public forums as well as to the relevant federal, state, and local regulatory bodies, who should also be directed to post this information on their websites. Notice should be required at least one week in advance of any incineration activities in order to allow time for public education and for individuals to take appropriate protective measures. The costs for owners and operators to provide such notice would be minimal, and the public benefits would be significant. In addition, to the extent that large capacity air curtain incinerators that are operating as permitted CISWI are portable, any regulatory revision should require that such air curtain incinerators incinerate disaster debris under the temporary use exception only in their fixed, permitted location, or, if the permit

does not require a specific location, in their primary place of operation and with a sufficient buffer from ambient air in heavily trafficked neighborhoods.

H. The Proposed Rule does not provide for adequate federal and state regulatory review of when and where uncontrolled incineration of disaster debris will occur.

In addition to public notice, the proposal fails to require appropriate approval and oversight by relevant federal, state, and local regulatory authorities regarding when and where uncontrolled incineration of disaster debris may occur. As discussed above, uncontrolled incineration of disaster debris will likely result in significant harmful air pollution. In the absence of more information about the permit conditions for air curtain incinerators operating under the CISWI subpart, it is possible that some of the incinerators subject to this exemption may be portable, which could also result in the release of significant harmful emissions directly in the neighborhoods where people live, work, and recreate. Such releases may have considerable health impacts, particularly for individuals or family members with pre-existing health conditions. Although we are opposed to any temporary use exemption, given these possible health impacts, any regulatory revision permitting the uncontrolled incineration of disaster debris, particularly demolition debris, should include a requirement that such use be approved in advance by appropriate federal, state, and local regulators and subject to review and oversight by those regulators. In addition, any regulatory revision must provide for an appropriate buffer between incineration activities under the proposed exclusion and those areas where people live, work, and recreate. Given the risk that disaster debris will contain hazardous materials, such approval and oversight would also be an essential component to ensuring that appropriate efforts are made to identify and segregate such materials prior to incineration.

I. The Proposed Rule does not make clear that air curtain incinerators operating as CISWI must comply with opacity limitations when used for disaster recovery.

As proposed, the temporary use exclusion provides that "CISWI units would not need to comply with their [Clean Air Act] section 129 emission standards and associated requirements while they are used to combust debris." 91 Fed. Reg. at 13,555. In addition to emission standards and associate standards promulgated under section 129(a)(1)(D), large capacity air curtain incinerators permitted as CISWI that are used exclusively to incinerate clean vegetative waste also must comply with opacity limitations established by EPA. *See* 42 U.S.C. § 7429(g)(1). As drafted, it is unclear whether the temporary use exclusion would waive these opacity requirements for CISWI air curtain incinerators. There would be no legal basis for doing so and EPA must make clear in any regulatory revision that these separate requirements are not waived during disaster recovery efforts under this CISWI temporary use exception.

J. The Proposed Rule failed to consider issues raised in connection with EPA's prior Interim Final Rule authorizing uncontrolled incineration of disaster debris.

The Proposed Rule to create a temporary use exemption for CISWI when used in disaster recovery efforts largely replicates the temporary use exemption for CISWI previously promulgated in the now withdrawn interim final rule. *See Commercial and Industrial Solid Waste Incineration Units: Temporary Use Incinerators and Air Curtain Incinerators Used in Disaster Recovery Interim Final Rule; Request for Comment*, 90 Fed. Reg. 41508 (Aug. 26, 2025). EPA previously requested comment on that interim final rule and received numerous comments opposed to the temporary use exemption. *See* EPA Docket No. EPA-HQ-OAR-2003-0119. However, EPA made no effort whatsoever in the Proposed Rule to

consider or address the myriad issues raised with respect to the approach to disaster debris it proposes. Instead, the proposal here is largely identical to the prior interim final rule, and the preamble to the Proposed Rule largely replicates the preamble language for the interim final rule. This process suggests that EPA did not engage in a reasoned decisionmaking process before reaching its recommendation here. The agency apparently undertook no effort to consider and address the issues raised in the comments on the interim final rule, and the Proposed Rule provides no explanation for why EPA continues to make the same proposal with the same explanation, notwithstanding the issues raised in those comments.

K. Although opposed to the proposal, we appreciate the fact that the Proposed Rule makes clear that commercial and industrial air curtain incinerators engaged in temporary use to combust disaster debris must have a Title V permit.

Although we are opposed to this proposal for the myriad reasons outlined above, we appreciate the fact that the Proposed Rule makes clear that any commercial and industrial solid waste incineration units engaged in temporary use to combust disaster debris must at least obtain a Title V permit.

We are opposed to the Proposed Rule's separate proposal to eliminate Title V permitting requirements for large capacity air curtain incinerators that combust only clean vegetative waste. *See* Part III.A., *infra*. However, although we oppose the temporary use exclusion for CISWI, we appreciate the fact that the Proposed Rule makes clear that only permitted CISWI units can combust disaster debris under the exclusion, except for clean vegetative waste. Air curtain incinerators operating under the proposed new subpart, if adopted, should not be authorized to incinerate disaster debris other than clean vegetative waste.

III. The proposal to deregulate air curtain incinerators should not be adopted.

A. Any air curtain incinerator operating under the proposed new subpart must be expressly limited to incineration of "wood wastes, yard wastes, and clean lumber."

We do not oppose consolidating the regulation of air curtain incinerators that combust only "wood wastes, yard wastes, and clean lumber" and that comply with opacity limitations established by EPA, as contemplated by the exception in section 129(g)(1), in a new subpart. The Proposed Rule, however, does not contain the regulatory text that EPA proposes to implement this proposal. We believe that it is critical that any regulatory revision to implement this proposal contain an express and enforceable limitation of air curtain incinerators operating under this part to the combustion of only "wood wastes, yard wastes, and clean lumber" (i.e., clean vegetative waste). In addition, given the ease with which wood containing lead, arsenic, or other harmful additives may be intermingled with other vegetative debris, particularly following natural disasters, any regulatory revisions in this regard must impose effective mechanisms to ensure that vegetative wastes are appropriately inspected so that treated wood products or other materials are identified and removed in advance of any incineration. Any regulatory revision should provide for substantial civil penalties if operators fail to properly ensure that the material burned in these units is limited to clean vegetative waste, given the significant public health and environmental effects associated with burning other types of waste in air curtain incinerators. Any revised regulations should be clear that burning any other material in an air curtain incinerator operating under this proposed new subpart, whether intentional or inadvertent, is a per se violation and that the burden falls on the operator to ensure that the materials combusted are, in fact, clean vegetative waste.

B. The proposal to excuse air curtain incinerators from Title V permitting requirements should not be adopted. [ACI-0; ACI-5]

Permitting processes allow regulators and the public to address important questions about when, where, and how sources of harmful air emissions operate. The Title V operating permit program established by the 1990 Clean Air Act Amendments streamlined air quality regulations by consolidating federal and state requirements into a single comprehensive document. This process allows for monitoring, reporting, and public oversight of sources of significant harmful air pollution. Air curtain incinerators, particularly those with a capacity in excess of 35 tons per day, almost certainly have potential emissions in excess of 10 tons per year of a hazardous air pollutant listed in section 112—or 25 tons per year of a combination of hazardous air pollutants—and therefore qualify as major sources.[47] Assuming *arguendo* that they are burning nothing but "wood wastes, yard wastes and clean lumber" and meeting opacity limitations established by EPA by rule, 42 U.S.C. § 7429(g)(1), they are major sources of hazardous air pollutants for which EPA must establish standards under section 112 of the Clean Air Act. 42 U.S.C. § 7412(c)(1), (d)(1). Accordingly, EPA must list them as a new source category under section 112(c)(5), establish appropriate emission standards, and continue to require such units to obtain Title V permits before undertaking operations. In addition, for portable air curtain incinerators, the EPA should require a new source review each time the air curtain incinerator is moved to a new location so that the public can participate in deliberations about the locations where waste may be incinerated, the types of waste incinerated, and the times of day when operations

[47] Wood-burning furnaces and boilers combusting similar wood and vegetative fuel are already regulated as major sources under section 112(c)(6), and it is reasonable to expect large capacity air curtain incinerators combusting clean vegetative waste to have comparable if not worse emissions profiles.

are permitted. The public has relied upon the notice, opportunity to participate, and regulatory oversight afforded by the permit process.

Permits allow regulatory oversight of compliance with permit requirements and facilitate enforcement when permit conditions are violated. The proposal to excuse air curtain incinerators from Title V permitting requirements would allow such incinerators to circumvent this important public and regulatory participation and oversight despite their considerable emissions. This is particularly concerning because the new subpart is not limited to small capacity air curtain incinerators previously regulated as OSWI but includes units with large capacities—capacities in excess of 35 tons per day—which have concomitantly large impacts on local air quality. For instance, EPA monitoring of the use of air curtain incinerator on clean vegetative waste during clean up efforts following Hurricane Sandy showed repeated instances of fine particular matter levels exceeding healthy levels in areas surrounding the incineration operations.[48] These EPA findings, however, are nowhere discussed in the Proposed Rule. Permitting processes are designed to ensure appropriate regulatory oversight and public participation that is essential here given the significant potential public health and environmental impacts of use of air curtain incinerators even on clean vegetative waste.

We therefore oppose the proposal to excuse air curtain incinerators from Title V permit requirements. If EPA nonetheless adopts the proposal, any new rule must include alternative mechanisms to ensure prior regulatory approval and public participation in the terms of operation for air curtain incinerators under this subpart, including for the locations where such units will operate.

[48] *See* EPA, Hurricane Sandy Response: Air Monitoring Results, available at https://perma.cc/SD8S-GM74, attached as **Ex. Y**.

C. The proposal does not address the unique public health risks presented by the use of portable air curtain incinerators.

Because air curtain incinerators can be portable, the current proposal would also effectively authorize their use to combust clean vegetative waste directly in the neighborhoods where people live, work, and recreate. As the federal and state agency studies cited above show—*see* **Ex. U**; **Ex. V**; **Ex. W**; **Ex. X**; **Ex. Y**—operation of air curtain incinerators can have considerable impacts on air quality in the area where combustion activities take place. This is true even for air curtain incinerators that burn only clean vegetative waste, particularly large capacity units capable of burning in excess of 35 tons of waste per day. This means that the operation of air curtain incinerators directly in these heavily trafficked neighborhoods would result in significant local exposures to harmful air pollutants. These public health risks are further exacerbated for individuals with health conditions that leave them with heightened vulnerabilities to harmful air toxins.

The current proposal contains no limitations on use in heavily populated residential, commercial, and recreational locations. Questions about the placement of incineration operations are often a topic of discussion for public participation and regulatory review in the permitting process, but EPA proposes to eliminate that permitting process for units operating under this subpart. We oppose those changes, but any regulatory revision reorganizing air curtain incinerators into their own subpart must contain appropriate limitations regarding where such units can operate, and must include some mechanisms to ensure prior regulatory approval and public participation in the terms of operation for these units, including for any location where they intend to operate. In addition, any regulatory revision must provide for an appropriate buffer between incineration activities by these units and those areas where people live, work, and recreate.

D. The proposal does not provide for adequate public notice of when and where air curtain incinerators will be combusting clean vegetative waste. [ACI-0; ACI-5]

The permit process also typically addresses when and where a source of harmful air pollutants will operate. As discussed above, the public has significant interest in advance notice of when and where air curtain incinerators will be engaging in burning clean vegetative waste, given the potential impact on air quality and the emission of harmful air pollutants in the area of operation. This is particularly so for individuals with health conditions that create heightened vulnerabilities to harmful air toxins. The public has relied on the permit process to provide notice and protection from the emissions of the operation of these units. But as it currently stands, the proposal does not provide any mechanism to inform the public about when and where the incineration of clean vegetative waste in these units will occur. Instead the proposal would allow air curtain incinerators—including units with large capacities in excess of 35 tons per day—to operate indefinitely in any location the operator might choose without any regulatory approval, public participation, or public notice.

If this proposal were adopted, members of the public would have a significant interest in being informed about when and where such incineration would be occurring, particularly if it might be undertaken directly in the neighborhoods where they live, work, and recreate. Members of the public may want to take steps to protect their health, including by closing windows, avoiding time outdoors, increasing air filtration indoors, avoiding locations they might otherwise frequent, or even relocating to avoid exposure to the harmful air pollutants likely to be produced. This is particularly so for individuals who may have specific health concerns, either for themselves or vulnerable family members,

where exposure to certain air pollutants may have significant and deleterious effects on their health. The proposal as it stands leaves these people to suffer these negative health effects unaware, disempowered to take the steps necessary to protect themselves and their loved ones.

Although we believe EPA must require prior public participation and regulatory approval before air curtain incinerators combust waste at a new location, at a minimum, any regulatory revision reorganizing the regulation of air curtain incinerators must provide for adequate and advance public notice before incineration of clean vegetative waste takes place. This is necessary to allow for appropriate public education and to allow individuals to take the steps they find necessary to protect themselves and their loved ones. Before undertaking incineration in a new location, operators should be required to provide appropriate public notice, including the location where the incineration will take place, the nature of the waste to be combusted, the anticipated duration of the incineration efforts, and the times of day when the incineration efforts will be operational. This notice should be required to be published in appropriate public forums and provided to the relevant federal, state, and local regulatory bodies, who should also be directed to post this information on their websites. Notice should be required at least one week in advance of any incineration activities in order to allow time for public education and for individuals to take appropriate protective measures. The costs for owners and operators to provide such notice would be minimal, and the public benefits would be significant.

E. The proposed testing and monitoring requirements for air curtain incinerators are not sufficient to ensure compliance with the opacity limitations. [ACI-2; ACI-3; ACI-4]

The proposed testing and monitoring requirements for air curtain incinerators operating under the new proposed subpart are not sufficient to adequately ensure that such units are operating in compliance with applicable opacity limitations. The Proposed Rule would require only a single annual compliance test that is based on subjective interpretations of the level of opacity as observed by an employee of the operator at a time chosen by the operator. The self-selection of the time of testing is particularly problematic given that even within the category of clean vegetative waste, different types of feedstock may have dramatically different effects on opacity levels, given that the category ranges from clean lumber to green, leafy vegetation.

This limited, subjective, and self-selected test does not suffice to ensure that the unit is operating in compliance with the opacity limitations throughout its operations. Testing and monitoring requirements for air curtain incinerators should include more frequent testing and testing at times unknown to the operator. In addition, operators should be required to submit video recordings of testing periods so subjective evaluations of opacity levels may be reviewed by federal and state regulators. This would impose little additional cost burden on operators but would provide an independent mechanism to check subjective evaluations of opacity.

In addition, operators of air curtain incinerators should be required to keep federal and state regulators informed of when and where they plan to operate the units to burn clean vegetative waste. This would enable regulators to make unannounced visits to ensure that the feedstock being combusted does, in fact, consist only of qualifying “wood wastes, yard wastes, and clean lumber,” and

allow for independent observations to confirm that the unit is, in fact, operating within applicable opacity limits.

CONCLUSION

For these reasons, EPA should not adopt the regulatory revisions proposed in the Proposed Rule.