



EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, DC INTERNATIONAL

April 6, 2020

Andrew Wheeler
Office of the Administrator
U.S. Environmental Protection Agency
Room 3000
WJC West Building
1200 Pennsylvania Ave., NW
Washington, DC 20460
Wheeler.andrew@Epa.gov

Re: Petition for Reconsideration of Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards; Final Rule, 85 Fed. Reg. 6064 (Feb. 4, 2020), Docket No. EPA-HQ-OAR-2010-0682

BY E-MAIL AND CERTIFIED MAIL

Dear Administrator Wheeler:

This is a petition under Clean Air Act (“CAA” or “the Act”) § 307(d)(7)(B), 42 U.S.C. § 7607(d)(7)(B). The parties submitting this petition are Air Alliance Houston (2409 Commerce St., Houston, TX 77003); California Communities Against Toxics (P.O. Box 845, Rosamond, CA 93560); Clean Air Council (135 S. 19th St., Suite 300, Philadelphia, PA 19103); Coalition For A Safe Environment (1601 North Wilmington Blvd., Wilmington, CA 90744); Community In-Power & Development Association (1301 Kansas Ave., Port Arthur, TX 77640); Del Amo Action Committee (4542 Irone Ave., Rosamond, CA 93560); Environmental Integrity Project (1000 Vermont Ave. NW, Washington, D.C. 20005); Louisiana Bucket Brigade (4226 Canal St., New Orleans, LA 70119); Sierra Club, 2101 Webster Street, Suite 1300, Oakland, California 94612, (415) 977-5500; Texas Environmental Justice Advocacy Services (TEJAS, 900 North Wayside Drive, Houston, TX 77023); and Utah Physicians for a Healthy Environment (423 W. 800 S., Suite A108, Salt Lake City, UT 84101).

Petitioners request that EPA reconsider certain aspects of the final action taken at 85 Fed. Reg. 6064 (Feb. 4, 2020), and titled “National Emission Standards for Hazardous Air Pollutants: Petroleum Refinery Sector” (“2020 Rule”), to satisfy the Clean Air Act, as discussed below.

FACTUAL AND LEGAL BACKGROUND

Petroleum refineries emit at least 17,200 tons per year of highly hazardous air pollution in the United States.¹ Communities near the over 140 existing petroleum refineries in the United

¹ 2015 Final Residual Risk Assessment at 36 (“2015 RRA”), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0800>.

States regularly breathe and experience other types of exposure to potent carcinogens and neurotoxicants, such as benzene, formaldehyde, naphthalene, hydrogen cyanide, 1,3-butadiene, polyaromatic hydrocarbons (PAH), dioxins, and persistent, bioaccumulative metals such as arsenic, nickel, and cadmium.² In 2015, EPA estimated that refineries' air pollution alone triggers a new cancer case approximately every other year—as many as 6 new, additional cancer cases every decade.³ Refinery pollution also causes or contributes to respiratory difficulty, reproductive, neurological, and other chronic and acute harm.⁴

EPA's risk assessment numbers do not fully capture the real-world impacts that communities face. As EPA recognized in 2015, refinery emissions are likely underestimated in its analysis: “the record is replete with evidence that emissions from refinery MACT sources may be understated, particularly from fugitive sources (storage tanks, wastewater treatment, and equipment leaks), which are difficult to characterize and are significant.” 2015 RTC at 209 (-0802). EPA's risk assessment likely also significantly undercounts the health risks for fence-line communities as Commenters' 2014 and 2016 Comments explained. Particularly problematic, for years, the refinery sector has had a pattern of repeated upsets and malfunctions that have gone unremediated and undercounted under the previously allowed exemption for such emissions.⁵ In the 2015 Rule, EPA mandated fence-line monitoring for the first time, to attempt to bring refineries' toxic fugitive emissions under better control by finding uncounted fugitive emissions and assuring compliance with the emission standards.

Certain communities experience a disproportionate share of this air pollution because they have multiple refineries, e.g., in the Houston Ship Channel and Port Arthur, TX, in the highly industrialized area sometimes known as “cancer alley” in Louisiana, in Los Angeles, CA, and Salt Lake City, UT. Refinery pollution particularly affects children, and communities of color and low-income communities already facing severe cumulative impacts of an array of toxic exposures.⁶ Of the people exposed to higher cancer risk from refineries, 50% are people of color (compared to 28% in the national population), with African-Americans, and Hispanic or Latino communities bearing the brunt of this disproportionate burden.

² Petitioners' 2014 Comments at 11-26, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0568>.

³ 2015 RRA at 42 (“The total estimated cancer incidence from this source category considering allowable emissions is expected to range between 0.4 and 0.6 excess cancer cases per year or one excess case in every 1.5 to 2.5 years.”).

⁴ Cal. EPA OEHHA, Analysis of Refinery Chemical Emissions and Health Effects (Mar. 2019) (“OEHHA 2019”), <https://oehha.ca.gov/media/downloads/faqs/refinerychemicalsreport032019.pdf> (attached).

⁵ Petitioners' 2014 Comments at 26-27, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0568>; Petitioners' 2016 Comments at 5-12, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0889>.

⁶ Analysis of Socio-Economic Factors for Populations Living Near Petroleum Refineries, (-0226); Analysis of Socio-Economic Factors for Populations Living Near Petroleum Refineries Post Control Scenario at 8, (-0227); see also UCC – EIP, *Breath to the People*, Sacred Air and Toxic Pollution (Feb. 26, 2020), https://d3n8a8pro7vhm.cloudfront.net/unitedchurchofchrist/pages/24840/attachments/original/1582721312/FINAL_BreathToThePeople_2.26.2020.pdf?1582721312.

The Clean Air Act directs EPA to regulate hazardous air pollution from petroleum refineries to protect public health. Petitioners sued EPA in 2012 to compel the agency to complete overdue health and technology review rulemakings for the Petroleum Refinery Sector, 40 C.F.R. Part 63 Subparts CC and UUU pursuant to Clean Air Act § 7412(f)(2) and 7412(d)(6).⁷ At that time, EPA was violating the Clean Air Act. The agency had dragged its feet and failed to meet these fundamental requirements to protect the public from refineries' toxic air pollution for more than a decade. EPA agreed to fulfill its rulemaking obligations pursuant to a consent decree, entered by the federal district court in 2014.

Pollution controls and monitoring methods are widely available, yet so far EPA has refused to set emission standards that ensure the health protection the Act requires under § 7412(f)(2) and (d)(6). The Act directs EPA to assess health risk under the previously-promulgated § 7412(d) emission standards, *i.e.* the “residual risk,” 2014 Proposed Rule, 79 Fed. Reg. 36,880, 36,883-84 (June 30, 2014). EPA must protect “the individual *most exposed*” to refineries' pollution by eliminating all unacceptable health risk, and providing an “ample margin of safety to protect public health.” 42 U.S.C. § 7412(f)(2) (emphasis added). The term “ample margin of safety” in § 7412, as interpreted by the court in § 7412(d)(4), means an actual protective buffer. *Sierra Club v. EPA*, 895 F.3d 1, 13 (D.C. Cir. 2018). Pursuant to § 7412(d)(6), EPA must “review, and revise as necessary” emission standards promulgated for a source category pursuant to § 7412(d). 42 U.S.C. § 7412(d)(6). This includes assessing and ensuring the standards reflect “developments,” *id.*, and making any other changes “necessary” to assure compliance with the Act—such as setting limits on uncontrolled or inadequately controlled emissions.

Refinery Rule Amendments

In 2014, EPA issued a proposed rule that included a health risk assessment and residual risk proposal for refineries pursuant to § 7412(f)(2). EPA also proposed action under § 7412(d)(6) to “review and revise, as necessary,” the refinery standards previously promulgated, including to set certain emission limits for the first time pursuant to § 7412(d)(2)-(3). 79 Fed. Reg. 36,880.

In that proposal, among other things:

1. EPA recognized the requirement that emission standards must be “continuous” and apply at all times, under the Clean Air Act and D.C. Circuit precedent. Therefore, EPA proposed to remove all malfunction exemptions applicable to the petroleum refinery sector, and to prohibit uncontrolled releases from pressure relief devices. 79 Fed. Reg. at 36,912.

⁷ *Air Alliance Houston v. EPA*, No. 12-1607 (D.D.C. filed Sept. 27, 2012) (filed by Petitioners Air Alliance Houston, California Communities Against Toxics, Coalition For A Safe Environment, Community In-Power & Development Association, Del Amo Action Committee, Environmental Integrity Project, Louisiana Bucket Brigade, and Texas Environmental Justice Advocacy Services (t.e.j.a.s.), represented by Earthjustice and EIP).

2. EPA also performed an assessment of health risks from refineries and found health risks to be “acceptable” even though the total maximum individual risk from routine inhalation alone was 100-in-1 million and there were other high health risks, and even though refinery pollution particularly affects children, communities of color, and low-income people.

In the final 2015 rule, among other things, EPA removed application of the general exemption for malfunction emissions and a specific allowance for emissions from bypass lines, and finalized some additional revisions to the refinery emission standards that strengthened health protection, such as by adding flare operational and monitoring requirements and delayed coker standards, and requiring continuous fence-line monitoring and corrective action requirements for benzene at all refineries. 80 Fed. Reg. 75,178 (Dec. 1, 2015).

However, undermining health protection and without notice, EPA promulgated new malfunction exemptions from the emission standards for flares and pressure relief devices allowing exceedances once or twice every three years with no consequence. 80 Fed. Reg. at 75,244; 40 C.F.R. § 63.648(j)(1), § 63.648(j)(3)(v)(A)-(C); 80 Fed. Reg. at 75,263-65; 40 C.F.R. § 63.670(o). EPA also established new, complete exemptions for such exceedances anytime they are associated with a so-called “force majeure event.” 80 Fed. Reg. at 75,245 (40 C.F.R. § 63.648(j)(3)(v)(B)-(C) (PRD); *id.* at 75,264-65 (§ 63.670(o)(7) (flares)). EPA issued these surprising new exemptions without any public comment opportunity.⁸

Under § 7412(2), EPA also revised the risk assessment, recognizing that refineries cause additional cancer risk from non-routine inhalation (malfunction events) that EPA had not added to the routine cancer risk from inhalation to reach its acceptability determination, or to the multipathway cancer risk from PBTs. 2015 RRA at 49. And EPA found that the acute risk from benzene alone was a hazard quotient of 14—fourteen times EPA’s acute harm threshold. 2015 RRA at 52.

In February 2016, Petitioners petitioned EPA for reconsideration of the new exemptions and the revised risk assessment and determination in view of that assessment.⁹ In fall 2016, EPA granted reconsideration, held a public hearing, and requested notice-and-comment for the first time on these provisions and changes in the risk assessment and determination.¹⁰ In December

⁸ 80 Fed. Reg. at 75,240 (40 C.F.R. § 63.641: “Force majeure event means a release of [hazardous air pollutants], either directly to the atmosphere from a relief valve or discharged via a flare, that is demonstrated to the satisfaction of the Administrator to result from an event beyond the refinery owner or operator’s control, such as natural disasters; acts of war or terrorism; loss of a utility external to the refinery (*e.g.*, external power curtailment), excluding power curtailment due to an interruptible service agreement; and fire or explosion originating at a near or adjoining facility outside of the refinery owner or operator’s control that impacts the refinery’s ability to operate.”).

⁹ AAH *et al.* Pet’n for Recon. (Feb. 1, 2016), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0860>. Petitioners also filed a petition for review of the 2015 Rule, which the D.C. Circuit held in abeyance since that time.

¹⁰ Transcript of Nov. 17, 2016 Public Hearing in Houston, TX, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0933>.

2016, Petitioners filed detailed comments explaining why EPA should remove the PRD and flare malfunction exemptions from the rule.¹¹ Petitioners also commented that the Act and EPA’s own scientific guidance require the agency to add all cancer risks together in order to meet EPA’s responsibility to assess risk and protect the “individual most exposed” to refinery pollution. Doing so would tip the cancer risk above 100-in-1 million, EPA’s presumptive acceptability “benchmark” under § 7412(f)(2).¹² Petitioners commented that, due to the cumulative risks refinery pollution causes to neighboring communities, including from high acute risk, EPA must find health threats are “unacceptable” and set stronger emission standards for refineries that reduce refineries’ emissions and provide an “ample margin of safety to protect public health.” *Id.*

2020 Rule

Four years after the petition was filed, EPA rejected Petitioners’ 2016 comments, refused to remove the unlawful exemptions, and refused to recognize that health risks from refineries are unacceptable or strengthen the emission standards. 85 Fed. Reg. 6064 (Feb. 4, 2020). In the 2020 Rule, EPA relied on new rationales and new data for these conclusions that it has not subjected to public notice-and-comment.

In particular, EPA attempts to justify the flare and PRD exemptions with new rationales not presented for notice-and-comment:

- (1) EPA provides a new rationale for its contention that the exemptions for PRDs and flares do not violate the Act’s requirement for emission standards to be “continuous,” contending that some components of work practice standards apply during these periods;
- (2) EPA newly claims that the exemptions meet § 7412(h) and 7412(d)(2)-(3) even though they do not match the emission limitations achieved by sources operating under the standards in California EPA described as the “floor”; and newly advances a related rationale that it may include a “force majeure event” exemption because the SCAQMD Rule 1173 includes such a provision.

EPA also provides new rationales to try to justify its finding that the health risks to communities are acceptable:

¹¹ Petitioners’ 2016 Comments (Dec. 19, 2016), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0889>.

¹² From that point in time through 2019, EPA took some additional targeted actions, mainly to address industry’s separate petitions for reconsideration (as well as to correct one problem with delayed coker standards that Petitioners had identified). During that time, EPA also added an indefinite extension for compliance reports associated with a “force majeure event,” which constitutes an exemption as there is no new deadline established. Petitioners opposed that extension in comments filed in 2018. Petitioners’ May 2018 Comments (May 25, 2018), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0953>. After EPA finalized that reporting exemption in 2018, Petitioners filed a petition for review that was consolidated with the original case in the D.C. Circuit.

- (1) EPA newly claims it can ignore its own guidelines and the best available science directing that cancer risk is additive by assuming that the person most exposed to the highest inhalation risks is not also exposed to the highest multipathway risk.
- (2) EPA now attempts to justify its determination that risk is acceptable and evade its own longstanding benchmark of 100-in-1 million by contending it can ignore excess cancer risk above that benchmark, and that it will actually only consider risk presumptively unacceptable if cancer risk exceeds 110-in-1 million, or possibly 200-in-1 million (as EPA's own rationale is vague and unclear).
- (3) EPA suddenly claims acute risk from benzene is far lower than it found in 2015, based on a decision made by unidentified staff in May 2018, and not provided for notice-and-comment. EPA changed course by using a different dose-response value to assess this risk than the California acute reference exposure level (27 ug/m³), which reflects best available science and is the factor its guidelines direct it to apply. Instead, EPA uses a factor designed for emergency response planning (ERPG-1), not for assessing and preventing unacceptable community health risks from regular exposure to air pollution, to calculate the acute risk.

EPA did not release any of the above-described, new rationales and new information for public notice-and-comment. They appeared nowhere in the 2016 proposal on reconsideration. 81 Fed. Reg. 71,661 (Oct. 24, 2016).

EPA has thus violated the notice-and-comment requirements of the Clean Air Act and this violation substantially prejudices Petitioners' interests by denying them the opportunity to persuade the agency to follow the Act and the ability to present objections to these rationales and information first to the agency. 42 U.S.C. § 7607(d)(3)-(6).¹³

Because EPA did not present its new rationales and new data for public notice-and-comment until the 2020 Final Rule, it was "impracticable" to object and show why EPA's regulatory provisions based on these rationales are unlawful and arbitrary for the reasons provided in this petition. 42 U.S.C. § 7607(d)(7)(B). Further, the grounds for the objections discussed in this petition arose after the closure of the period for public comment. Therefore, and because, as discussed below, Petitioners' objections are "of central relevance to the outcome of the rule," EPA must grant reconsideration pursuant to § 7607(d)(7)(B); *Chesapeake Climate*

¹³ The Clean Air Act requires EPA to provide public notice, with the proposed rule, of "a statement of its basis and purpose," and:

- (A) the factual data on which the proposed rule is based;
- (B) the methodology used in obtaining the data and in analyzing the data; and
- (C) the major legal interpretations and policy considerations underlying the proposed rule.

The statement shall also set forth or summarize and provide a reference to any pertinent findings, recommendations, and comments by the Scientific Review Committee established under section 7409(d) of this title and the National Academy of Sciences, and, if the proposal differs in any important respect from any of these recommendations, an explanation of the reasons for such differences. All data, information, and documents referred to in this paragraph on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule.

Action Network v. EPA, 952 F.3d 310 (D.C. Cir. 2020) (“CCAN”) (finding that EPA had unlawfully denied reconsideration where EPA failed to disclose in the proposed rule or grant reconsideration regarding the agency’s “process” for applying § 7412(d)(2)-(3), and the “critical reasoning behind its . . . analysis”).

I. EPA MUST GRANT RECONSIDERATION ON ITS NEW RATIONALE FOR THE PRESSURE RELIEF DEVICE AND SMOKING FLARE EXEMPTIONS.

A. Inability to Raise the Objection in Comments.

After Petitioners commented that the PRD and smoking flare provisions are unlawful exemptions for malfunction releases, rather than removing these exemptions, EPA has advanced a new rationale to contend that there are still “continuous” standards that apply.

Initially, in their 2016 Comments during the reconsideration proceeding, Petitioners explained why the allowances to exceed the maximum flare tip velocity and visible emissions requirement, in the “emergency flaring” work practice standard, and the allowances to release directly into the atmosphere for PRDs mean that the standards do not apply at all times. For example, it is unlawful for EPA to allow the flare and PRD standard exceedances (which allow an unlimited amount of HAP pollution to the atmosphere) to be deemed “not a violation” in view of the plain language in § 7602(k) that requires standards to be “continuous” and apply “at all times,” not just sometimes. *Sierra Club v. EPA*, 551 F.3d 1019, 1028 (D.C. Cir. 2008). Furthermore, EPA has no authority to set these allowances; doing so has encroached on judicial power, granted to courts by § 7604 to evaluate potential non-compliance and appropriate civil penalties, not to EPA under § 7413 or § 7412. *NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014).

Further, an episodic exemption from emission standards, by definition, cannot meet § 7412(h), which requires EPA to meet § 7412(d)(2)-(3), or § 7412(d)(2)-(3), because it is the opposite of a standard, allowing no control or lesser control during its term. Thus, it does not reflect the maximum achievable degree of emission reduction by any source, nor the average emission limitation achieved by the best-performing sources. It also violates § 7412(f)(2) because it does not provide any margin of safety to protect public health, much less an ample one. Unlike other limited statutory provisions that allow for narrow “exceptional events” allowances, § 7412 allows for no such malfunction exemption.¹⁴

In the 2020 Final Rule, however, lacking any possible way to justify the malfunction exemptions for flares and PRDs, EPA has presented a new rationale: that the agency “disagree[s] that the standards do not apply at all times” because EPA lifts some, but not all of the work practice standards during these malfunction periods. 85 Fed. Reg. at 6068, 6072.

Because EPA had not previously relied on this rationale for its exemption nor attempted to contend that there are standards that apply at all times during the malfunction periods,

¹⁴ See e.g., 42 U.S.C. § 7619(b) (addressing air quality monitoring data affected by an “exceptional event”); § 7410 (considering suspending state implementation plan requirements during an “energy emergency”); § 7545(c)(4)(C)(ii) (allowing temporary waiver of fuel or fuel additive controls or prohibitions due to a “natural disaster, Act of God,” etc.)

objecting to it during the public comment period was “impracticable” within the meaning of Clean Air Act § 307(d)(7)(B). There was no reasonable way Petitioners could have attempted to comment without seeing EPA’s rationale “in the [Notice of Proposed Rulemaking].” *CCAN*, 952 F.3d at 320. The grounds for our below-discussed objections arose after the close of the comment period under § 307(d)(7)(B), when EPA unveiled its new rationale with the 2020 final rule.

B. Objection: EPA’s Contention That It May Require Only Partial Standards During Malfunctions Is Unlawful and Has Failed to Demonstrate That There Are Continuous § 7412-Compliant Emission Standards Applicable to Pressure Relief Devices and Flares, As the Act Requires.

To argue that standards apply at all times, the agency relies on a new claim that there are some provisions in each work practice standard that *do* apply during the allowances even though EPA undisputedly lifts other provisions that it put in place specifically to assure § 7412(h) and § 7412(d)(2)-(3) compliance. EPA’s new rationale is neither explained nor supported and is both unlawful and arbitrary.

For PRDs, EPA states that facilities must comply with the preventative measures and monitoring “at all times,” and must perform a root cause analysis where there is a force majeure event. 85 Fed. Reg. at 6068. For flares, EPA states that facilities must comply with combustion efficiency standards, in particular, limits on the net heating value in the combustion zone, at all times, including during a force majeure event. *Id.* at 6072, 6073.

It is undeniable, though, that EPA has lifted certain core requirements for flares that are necessary for § 7412(h) and 7412(d)(2)-(3) compliance, and has done so simply to allow facilities to avoid meeting the Act’s requirements during malfunctions. Specifically, EPA has exempted flares from the maximum flare tip velocity and visible emissions prohibition once or twice every three years, and any time there is a “force majeure event.” 80 Fed. Reg. at 75,263-65; 40 C.F.R. § 63.670(o). Similarly, although the way to satisfy § 7412 is to prohibit PRD releases just as EPA originally proposed to do, instead, EPA has deemed it “not a violation” to allow uncontrolled, unlimited HAP releases from a PRD during such events—again, at least once or twice every three years, and for so-called “force majeure events.” Even if such an exemption from limits could be deemed a limit—which it cannot outside George Orwell’s Oceania—it does not reduce emissions at all. The D.C. Circuit has made it abundantly plain that even if EPA could craft a work practice standard that could possibly “apply to the wide range of possible malfunctions,” “the EPA would need to determine that the standard would ‘reduce emissions of hazardous air pollutants,’ an evidence-based standard that is difficult (perhaps impossible) to apply to the unpredictable circumstances of malfunctions.” *U.S. Sugar Co. v. EPA*, 830 F.3d 579, 608 (D.C. Cir. 2016) (*reh’g granted on remedy* 844 F.3d 268 (D.C. Cir. 2016) (changing remedy to remand instead of vacatur)).

Thus, the work practice standards plainly contain explicit exemptions that break their continuity. There are gaping holes in the emission standards during malfunctions, to excuse emissions that would otherwise qualify as a violation—and those deficiencies are fatal to the standards’ legality. During the malfunctions the exemptions allow, there is simply no § 7412-

compliant standard in place. The Act does not allow a piecemeal approach where EPA can set a standard to meet § 7412, but then say that only some part of it will apply at all times. 42 U.S.C. § 7602(k).

Even assuming that the only requirements that apply during *force majeure* events could be counted as some kind of limit on refineries' emissions, *Sierra Club* makes clear that the requirements that EPA promulgates under § 112—whether they are numeric emission limits or work practice requirements—must be both “continuous” and “§ 112-compliant.” Further, the text of the Clean Air Act makes plain that any work practice requirements that EPA promulgates under § 112(h) must be consistent with § 112(d)—*i.e.* reduce emissions by the “maximum” degree that is “achievable” and, at a minimum, to the level already “achieved” by the relevant best performing sources. *See also U.S. Sugar*, 830 F.3d at 608 (“EPA would need to determine that the standard would ‘reduce emissions of hazardous air pollutants,’”). EPA’s work practices for pressure relief devices and flares are unlawful and arbitrary, notwithstanding the agency’s new rationale for them, because the only requirements that are “continuous” are not “§ 112-compliant.”

Petitioners do not discount the value of the various measures that apply during these times such as the combustion efficiency requirement for flares and the PRD release preventative measures, but those all go to trying to prevent additional *future* emissions releases. None of the limited provisions that still apply during malfunctions negates the fact that EPA has excused facilities from the components of the standards that are needed to satisfy § 7412(h) and 7412(d)(2)-(3) during these periods. In particular:

- Combustion efficiency requirements EPA points to, that it says apply during the “above smokeless capacity” flaring, are important but they still do nothing to restrict the potentially extremely high *net total amount* of HAPs going into the air. And, the whole point of EPA’s “above smokeless capacity” provision is to allow flares not to operate in the most efficient way during malfunctions—by letting them avoid the visible emissions and maximum flare tip velocity requirements without consequence, and, consequently, to allow much higher than usual HAP releases.¹⁵ During the allowed malfunction releases, flares are allowed to smoke, demonstrating to the naked eye that they are not destroying as many HAPs as when that smoke is not visible. And, they are allowed to exceed the maximum flare tip velocity, which is also needed to prevent higher HAP emissions from the equipment routed to a flare. Thus the provisions that do apply to flares during malfunctions do not assure the necessary restriction (98-percent HAP destruction efficiency) on HAPs routed to those flares. Although EPA contends otherwise, EPA has not shown this and could not do so. In the 2015 Final Rule, EPA promulgated the entire “suite” of flare requirements (*i.e.*, visible emissions prohibition, maximum flare tip velocity, combustion zone operating limits, and pilot flame requirements) to ensure that flares reduce HAPs by 98 percent. 2015 RTC at 83; *see also* 80 Fed. Reg. at 75,182; 2015 RTC at 8 (“we proposed and

¹⁵ As EPA recognized in 2015: “smoking flares indicate reduced combustion efficiency. Furthermore, . . . [the no visible emissions] requirement is part of a suite of flare requirements that ensure that the flare is well-operated as necessary to achieve the MACT requirements for affected emissions sources using flares as a control device.”). 2015 RTC at 83 (-0802).

are finalizing significant new operating and monitoring requirements for flares to ensure flares are achieving the required control efficiency.”); 2015 RTC at 75 (“98 percent destruction efficiency . . . forms the basis for the MACT flaring provisions”). All of these requirements are needed to maintain 98 percent destruction efficiency—not just some of them. Yet EPA illogically now argues that flares can still maintain a 98 percent destruction efficiency even when half of these core requirements no longer apply, during periods of operation above “smokeless capacity”—periods when HAP emissions will actually be *greater* than periods of normal operation due to the increase in gases routed to flares. Further, when smoking, a flare increases its emission of the products of incomplete combustion.¹⁶ Lifting the provisions prohibiting visible emissions and setting the maximum flare tip velocity allows a flare to emit an uncontrolled amount of HAPs, going beyond what the standards are supposed to allow and thus violating § 7412(d), during these periods.

- The PRD provisions that apply are extremely vague, include many options for the facility, and do not actually reduce emissions during releases that occur. Although preventative measures for PRD releases are essential, if a PRD release has occurred that means such measures failed in a particular instance. And, the measures EPA has applied are insufficient alone to assure § 7412 compliance. For example, EPA has not required any preventative measures specifically designed to try to prevent and avoid smoking flares or PRD releases connected to force majeure events, even though the Chemical Safety Board has recognized many such releases are avoidable—e.g., in its 2017 Safety Alert for refineries and chemicals on safe shutdown and startup procedures and in its report on one of the major releases that occurred in the wake of Hurricane Harvey in 2017.¹⁷ As the CSB then-Chairperson Vanessa Sutherland explained in releasing the report on the Arkema fire after Hurricane Harvey that included many such measures designed to prevent so-called “natech” disasters and releases. The CSB uses the term “natech” event to mean a pollution release or

¹⁶ 80 Fed. Reg. at 75,215 (“smoke in the flare exhaust is an indication of incomplete combustion.”); EPA Flare Study (in the docket); OEHHA 2019 App. E (listing examples of pollutants released during “non-routine” refinery events, including flaring); *see also* Weyant, C.L., Shepson, P.B., Subramanian, R., Cambaliza, M.O.L., Heimburger, A., McCabe, D., Baum, E., Stirm, B.H., Bond, T.C.: Black carbon emissions from associated natural gas flaring. *Environ. Sci. Technol.* (2016).

<https://doi.org/10.1021/acs.est.5b04712>; Wielgosiński, G. Pollutant Formation in Combustion Processes. Technical University of Lodz, Faculty of Process and Environmental Engineering Poland; Fahad M. Al-Fadhli, Yosuke Kimura, Elena C. McDonald-Buller, David T. Allen, Impact of Flare Destruction Efficiency and Products of Incomplete Combustion on Ozone Formation in Houston, Texas, *Ind. Eng. Chem. Res.* 2012, 51, 39, 12663-12673; Kindzierski W.B. (2000) Importance of human environmental exposure to hazardous air pollutions from gas flares, *Environ. Rev.* 8, 1, 41-62 (“emission of a variety of compounds such as volatile organic compounds (VOC's), polycyclic aromatic hydrocarbon (PAH's) as well as soot occur when the flaring process ensues with incomplete combustion”).

¹⁷ CSB, Safety Alert, After Harvey: Precautions Needed During Oil and Chemical Facility Startup (Aug. 2017), https://www.csb.gov/assets/1/20/csb_harvey2017_05.pdf; CSB, News Release (Aug. 27, 2017), <https://www.csb.gov/csb-urges-oil-and-chemical-facilities-to-take-special-safety-precautions-during-startups-following-hurricane-harvey/>; CSB Arkema Investigation Report (2018), <http://www.csb.gov/file.aspx?DocumentId=6068>.

industrial malfunction (“tech”) on top of and related to a natural disaster such as a hurricane or earthquake. As the CSB has explained: “Considering that extreme weather events are likely to increase in number and severity, the chemical industry must be prepared for worst case scenarios at their facilities. *We cannot stop the storms, but working together, we can mitigate the damage and avoid a future catastrophic incident.*”¹⁸ One of the preventative measures—the root cause analysis after a PRD release has occurred—is also valuable and may help prevent the next release. But like the other preventative measures, this does nothing to prevent or remedy the release that already occurred, and that it is the subject of the analysis.

It is indisputable that none of the provisions EPA points to as applying during malfunctions actually limit the amount of HAPs released during a malfunction—nor do so to the extent necessary to assure at least “the average emission limitation achieved” by the best-performing sources, and to assure the “maximum achievable degree of emission reduction” during such releases. 42 U.S.C. § 7412(d)(2)-(3). Allowing PRDs and flares to release an uncontrolled amount of pollution during the exemption periods that EPA deems “not a violation” thus means that there is no meaningful or legally sufficient limit on such pollution during these malfunctions. By contrast, the D.C. Circuit found that, based on the unique circumstances present in EPA’s MACT rule for industrial boilers (including EPA’s imperfect information and identified safety hazards), the startup and shutdown work practice standards there passed muster under 42 U.S.C. § 7412(d)(2)-(3) in part because they created no malfunction exemption and actually restricted HAPs. *Sierra Club v. EPA*, 884 F.3d 1185 (D.C. Cir. 2018).¹⁹

Contrary to EPA’s new rationale, the fact that *some* requirements apply during the exempted malfunction events does not change the fact that those alone *do not* control emissions continuously as required to meet § 7412(h) and § 7412(d)(2)-(3). The prohibition on visible emissions and the maximum flare tip velocity requirements are essential to limit emissions—because a flare smokes once it is *over* its “smokeless capacity”—and is therefore emitting a higher quantity of HAPs, destroying a lower quantity, and creating more products of incomplete combustion than when it does not smoke. Thus, for EPA to meet § 7412(d)(2)-(3), EPA must, at least, deem smoking flares and flare tip velocity exceedances to be a violation.²⁰ Similarly, the prohibition on uncontrolled emissions from PRDs that applies after a facility has used its number of free-violations, and whenever there is no force majeure event, is the only way to truly restrict the *amount* of emissions from these valves and similar devices. The PRD is either open or closed. If it is open it must be routed to a control device or it will emit freely into the air. Thus the only way to put any kind of § 7412(d)(2)-(3) limit on a PRD is to remove the exemptions.

¹⁸ CSB News Release, May 24, 2018, <https://www.csb.gov/csb-releases-arkema-final-report/> (emphasis added).

¹⁹ The circumstances present in that case are not the same as the circumstances here. Further, the flare and PRD provisions here cover *malfunctions*—not startup or shutdown periods. *See U.S. Sugar*, 830 F.3d at 608 (crafting § 112-compliant work practice standard is perhaps impossible for malfunction periods). And unlike the startup-shutdown standards in *Sierra Club*, these do not contain any of the built-in limitations the court found relevant that actually restricted the *amount* of HAPs sources emitted during those periods as § 7412(h) and § 7412(d)(2)-(3) require.

²⁰ EPA must also set additional restrictions on flares’ routine emissions, to satisfy § 7412(d)(2)-(3), as Petitioners discussed in their 2014 and 2016 Comments, as well as prohibiting smoking flares.

It is simply inaccurate for EPA to attempt to justify the free-pollution allowances by suggesting that they are continuous emission standards. Instead, they are non-standards. During most periods of time, certain provisions apply to flares and PRDs. During malfunctions once or twice every three years, and during any “force majeure event,” EPA is allowing exemptions from parts of the work practice standards that the agency itself found important and necessary to meet the § 7412(d) requirements and to assure compliance with the emission standards. That means that if facilities release HAPs that would otherwise exceed requirements, this event is not deemed a violation, and the facility is not subject to civil penalties or any other consequences. EPA has prevented an affected community member from bringing suit to enforce, and has attempted to prevent a court from being able to adjudicate a violation of the emission standards during malfunction periods.

Furthermore, it is also arbitrary for EPA to contend that it can apply some but not all work practice components to these pieces of equipment during these periods—especially when, as discussed next (and in Petitioners’ 2016 Comments), the work practice standards EPA has set do not meet § 7412(d)(2)-(3). Allowing exemptions—even if the standards otherwise met the Act’s requirements—undermines the effectiveness and value of the smokeless flare requirements, and of the preventative provisions EPA to deem. The free passes EPA allows, by deeming them “not a violation,” are literally escape valves from the PRD and smokeless flare standards, giving the facility incentive not to invest sufficient employee time, not to perform the checks needed, and allowing a facility to face no serious consequences even if every single PRD and every flare at that facility has multiple releases.

Other conclusions in the 2020 Final Rule further demonstrate that EPA’s rationale cannot save its unlawful action. EPA admits that the PRD releases it is allowing to be uncontrolled “are triggered by equipment or process *malfunction*.” 85 Fed. Reg. at 6068 (emphasis added). EPA further admits that the same is true for the flaring allowances: “these flare emissions are emissions due to a sudden increase in waste gas entering the flare, typically resulting from a malfunction or an emergency shutdown at one or more pieces of equipment that vents emissions to the flare . . . *during malfunction events*.” *Id.* at 6073 (emphasis added). In other rules since the 2015 Rule, EPA has similarly described the 2015 Rule’s exceedance allowances as “malfunction” provisions.²¹ These are transparently just another version of the same malfunction exemption the D.C. Circuit struck down in 2008. *Sierra Club v. EPA*, 551 F.3d at 1028.

EPA’s newest attempt to justify the exemptions – by contending that some kind of preventative measure or monitoring applies during the malfunction periods— is a strategy that has failed in court. In *Sierra Club v. EPA*, EPA attempted to point, in similar ways to SSM plans, to preventative measures, and other requirements like the “general duty” provision that applied but did not limit pollution during SSM periods. In *Sierra Club*, the court held that the fact that such measures were in place did not nullify the fact that there were no continuous § 112-compliant emission standards that applied during the SSM exemption. 551 F.3d at 1027-28.

²¹ See, e.g., EPA, Proposed Rule, National Emission Standards for Hazardous Air Pollutants: Generic Maximum Achievable Control Technology Standards Residual Risk and Technology Review for Ethylene Production, 84 Fed. Reg. 54,278 (Oct. 9, 2019) (“For example, in the Petroleum Refinery Sector RTR, the EPA established a work practice standard for unique types of malfunction”).

There can be no doubt that the reason EPA has provided these exemptions is to allow sources to avoid the established emission standards during malfunction periods, just as it tried to do previously with an explicit SSM exemption and affirmative defense to penalties during malfunctions. *Id.*; see also *NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014) (holding that EPA could not create an affirmative defense to civil penalties for malfunction releases “to account for the tension between requirements that emissions limitations be ‘continuous’ and the practical reality that control technology can fail unavoidably”). The ability to avoid the standards, and the Act’s consequences for violating them, during malfunction periods is precisely what the Act does not allow, as the D.C. Circuit has held in case after case as EPA has attempted to craft new versions of the same old exemption. Unless EPA removes these exemptions, the court will see through EPA’s attempt to dress these exemptions up as something different. Exemptions for malfunctions are just not emission standards and cannot survive judicial scrutiny.

EPA simply has no authority to grant a broad exemption from § 7412 regulations, in advance, by regulation. That Congress specifically chose to provide EPA authority for some allowances, such as for exceptional events or natural disasters, in other parts of the Act but did not do so here indicates its clear intent not to allow any force majeure event or other malfunction exemption here.²²

C. This Objection Is of “Central Relevance” to the Rule’s Outcome Because Section 112-Compliant Emission Standards Must Be Continuous and the Exemptions Have Dangerous Consequences for Public Health.

This objection is “of central relevance” § 7607(d)(7)(B) because it goes to the “legality” of the PRD and flare exemptions, providing “substantial support for the argument that the regulation should be revised.” *CCAN*, 952 F.3d at 320. It is indisputable, and EPA admits, that refineries must be subject to § 7412-compliant emission standards that are “continuous” and apply “at all times.” 42 U.S.C. § 7602(k); 2014 Proposed Rule, 79 Fed. Reg. at 36,913 (“In *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), the Court determined that standards under CAA section 112(d) must provide for compliance at all times and a release of uncontrolled HAP to the atmosphere is inconsistent with that requirement.”). The D.C. Circuit has repeatedly vacated other similar exemptions where EPA has attempted to justify excusing non-compliance or lifting penalties in advance due to malfunctions and should do so again if EPA does not remove the exemptions here. See, e.g., *Sierra Club v. EPA*, 551 F.3d 1019; *NRDC v. EPA*, 749 F.3d 1055.

The issue is also “of central relevance” because of the serious harm to communities exposed to refinery pollution from these exemptions, and the strong need for Petitioners to have EPA reconsider this new rationale and recognize that it cannot allow the malfunction exemptions. Extremely high amounts of emissions go directly into local communities’ air during

²² See e.g., 42 U.S.C. § 7619(b) (addressing air quality monitoring data affected by an “exceptional event”); § 7410 (considering suspending state implementation plan requirements during an “energy emergency”); § 7545(c)(4)(C)(ii) (allowing temporary waiver of fuel or fuel additive controls or prohibitions due to a “natural disaster, Act of God,” etc.).

the types of routine malfunction events in which EPA’s standards allow uncontrolled pollution releases from PRDs and smoking flares. For example, on August 9, 2015, a single PRD release at Shell Deer Park released more than 150 tons of 1,3-Butadiene in less than one hour.²³ These emissions increase cancer and other chronic and acute health threats to nearby communities already facing extremely high health threats, as EPA’s risk assessment and the rulemaking record show.²⁴ Furthermore, EPA has likely underestimated fugitive emissions, including from PRDs and flares during malfunctions, as demonstrated by the new EIP report analyzing 2019 fenceline monitoring data that refineries reported for benzene.²⁵ This report shows significantly higher fenceline ambient air concentrations than EPA had originally predicted—including at least 10 refineries that had exceedances of the action concentration level, and of the OEHHA REL during 2019.²⁶ EIP’s analysis of the final quarter of reported data for 2019 continues to show high benzene levels at the fenceline near at least ten refineries (some of the same and some additional), and again illustrates the high health threats they cause, with at least five showing impacts above the OEHHA REL and ATSDR level.²⁷ Thus the pollution impact of these exemptions makes this objection an important health issue that is of central relevance because of the Act’s purpose of preventing pollution and protecting public health that § 7412 implements. 42 U.S.C. § 7401(a).

The objections carry particular relevance because they show the illegality of exemptions that would exacerbate harm to public health and safety at times when the public needs pollution protection the most. For example, during natural disasters, which EPA includes in the definition as qualifying for the “force majeure event” exemption, emissions and health threats from air pollution increase even more—at times when communities need facilities to have a strong incentive to avoid releases, not an advance free pass to pollute. As just one series of powerful instances showing the need to avoid exemptions like this, the 2018 EIP report found that huge HAP releases from refineries and other chemical facilities were reported to the Texas Commission on Environmental Quality during and after Hurricane Harvey in 2017, finding a total of 8.3 million pounds of excess HAP released.²⁸ Many of these occurred *days after* the Governor declared a state of emergency, as facilities continued operating instead of preparing adequately for an orderly and safe shutdown.²⁹ EPA would allow such releases to qualify for the

²³ 2016 Comments at 18-20) (citing TCEQ Emissions Event Inventory, Incident 218482).

²⁴ 2015 RRA at 52 (finding additional health risks from “non-routine” emissions or malfunction events the standards allow); *see also* Petitioners’ 2014 Comments at 26-27, 34-57; Petitioners’ 2016 Comments at 5-12; Petitioners’ May 2018 Comments at 15-17; *see also* Excerpt from Petitioners’ Aug. 23, 2018 Comments opposing Rollback of Chemical Disaster Rule, Case Study: Hurricane Harvey (attached).

²⁵ EIP, Monitoring for Benzene at Refinery Fencelines: 10 Oil Refineries Across U.S. Emitted Cancer-Causing Benzene Above EPA Action Level (Feb. 6, 2020) (as updated Feb. 18, 2020), <https://www.environmentalintegrity.org/wp-content/uploads/2020/02/Benzene-Report-2.6.20.pdf> (attached).

²⁶ *Id.*

²⁷ EIP, Monitoring for Benzene at Refinery Fencelines Addendum: 2019 End-of-year Data Update (attached).

²⁸ EIP, Preparing for the Next Storm at 1 (Aug. 16, 2018), <https://environmentalintegrity.org/wp-content/uploads/2018/08/Hurricane-Harvey-Report-8.16.18-final.pdf>; EIP News Release, Aug. 16, 2018, <https://environmentalintegrity.org/reports/preparing-for-the-next-storm/>.

²⁹ *Id.* at 2.

“force majeure event” regulatory exemption—even though hurricanes are common occurrences and come, like clockwork, every year during the well-known, foreseeable hurricane season.

Hurricane Harvey and the high releases associated with this storm happened in 2017, after the comment period closed. EPA is well aware of these events.³⁰ Yet, it does not appear that EPA even considered these during its reconsideration action. In a 2019 report resulting from an investigation, EPA’s Office of Inspector General highlighted major flaws in EPA air quality data collection and emergency response during and after Hurricane Harvey when refineries and other chemical facilities were known to release millions of pounds of HAPs and other harmful pollutants.³¹ Thus far, there has been little or no enforcement by EPA at any of these facilities known to have had such releases. It is not publicly known how many facilities may have taken advantage of the “force majeure event” exemption as EPA has not released this information.

The circumstances surrounding COVID-19 provide another chilling example of why EPA must reconsider and remove the force majeure event exemptions from the Refinery Standards. After the President issued a national emergency declaration on March 13, 2020, and the COVID-19 virus cases began to increase exponentially, the American Petroleum Institute sent EPA a letter. That letter asks EPA for extraordinarily broad enforcement and regulatory exemptions (such as from fence-line monitoring for pollution releases, leak detection and repair requirements to identify and end pollution releases, and other undefined “regulatory noncompliance”) due to the virus, described as “non-essential compliance discretion.”³²

A few days later, EPA’s Assistant Administrator for Enforcement (OECA) published a new “temporary” enforcement discretion policy regarding “implications” of COVID-19 that applies for an indefinite period of time.³³ In this policy, EPA provides advance notice that it will not seek penalties for violations of monitoring, reporting, or compliance certification requirements “where the EPA agrees that COVID-19 was the cause of the noncompliance.”³⁴ The policy also states that EPA is open to considering similar direct violations of administrative settlement agreements and consent decrees as “force majeure,” and excusable as caused by COVID-19.³⁵ EPA says that the policy should not “be read as a willingness to exercise enforcement discretion in the wake of [an accidental hazardous chemical] release,” implicitly

³⁰ See, e.g., May 2018 Comments at 15-17.

³¹ EPA, Ofc. of Inspector Gen. (2019), EPA Needs to Improve Its Emergency Planning to Better Address Air Quality Concerns During Future Disasters, Report No. 20-P-0062 (Dec. 16, 2019), https://www.epa.gov/sites/production/files/2019-12/documents/epa_oig_20191216-20-p-0062.pdf.

³² Letter from Sr. Vice Pres. Frank J. Macchiarola, Am. Petrol. Inst. to Adm’r Wheeler on “Compliance Discretion” (Mar. 23, 2020) (attached) (providing a list seven pages long of “detailed examples of issues for which industry is seeking temporary relief through enforcement discretion, waivers or revised compliance timeframes in response to the COVID-19 pandemic”).

³³ EPA Enforcement Policy Memo from Susan Bodine, Ass’t Adm’r, OECA, to All Governmental and Private Sector Partners, Re: COVID-19 Implications for EPA’s Enforcement and Compliance Assurance Program (Mar. 26, 2020), <https://www.epa.gov/sites/production/files/2020-03/documents/ocamemooncovid19implications.pdf> (attached) (“OECA Policy on COVID-19”).

³⁴ *Id.* at 2-3.

³⁵ *Id.* at 4.

referring to § 7412(r).³⁶ This seems to signal, however, that in nearly any other circumstances, including potentially compliance with routine air pollution regulations, EPA is inviting requests from industry to not enforce or seek penalties for violations using COVID-19 as an excuse. Days later, EPA issued a letter to members of Congress describing this memo as a temporary policy illustrating how EPA would exercise its “case-by-case” enforcement discretion “after the pandemic is over.”³⁷

EPA has occasionally issued narrowly tailored advance enforcement statements during past emergencies, and this policy appears to be unusually broad, illustrating how sweepingly industry could attempt to seek and EPA could attempt to apply the “force majeure event” regulatory exemption in the Refinery Standards because it has no decisive constraints on how EPA may choose to apply it. For communities where families are sheltering at home, increasing their exposure to routine and non-routine air pollution, EPA’s suggestion that it will entertain requests from industry to use COVID-19 as an excuse for violations of health-protective regulations that protect people vulnerable to both air pollution and this disease is unconscionable.

EPA’s “Temporary Policy” that provides guidance on how EPA may choose to exercise its *enforcement discretion*, where industry makes a case-by-case showing that “COVID-19 was the cause of non-compliance,” shows how harmful and wide-ranging an advance regulatory exemption that authorized broad non-compliance could become.³⁸ The fact that API and EPA are already pointing to the COVID-19 crisis as potentially “force majeure,” illustrates how dangerous the advance regulatory exemption in this rule is. The exemption in the regulation is not limited to releases related to natural disasters or the other examples provided. Industry may attempt to rely on the force majeure event exemption for any release that it contends “result[s] from an event beyond the refinery owner or operator’s control,” with no stopping point. The Act does not allow this kind of back-and-forth with industry in defining what regulations apply, when. By contrast with a negotiated enforcement agreement that has a “force majeure” clause, the Refinery Standards must be “continuous” and apply at all times under the Clean Air Act, to assure the level of health protection required. The law is not a contract that industry can negotiate or argue its way out of. But that is what the force majeure event exemption turns the rules into. And a federal government plan responding to COVID-19 has suggested that the pandemic could go on for as long as 18 months.³⁹ The harm from allowing industry to evade requirements for such an extended period under the cloak of a “force majeure event” would be severe, illustrating how harmful this kind of exemption could be.

At the same time, the EPA enforcement policy memo also illustrates that creating an advance regulatory exemption is neither rational nor necessary. In the event an unusual circumstance comes up that makes it impossible to comply, EPA has well demonstrated that it believes it has other options where it deems that facility compliance was truly impossible—it can

³⁶ *Id.* at 7.

³⁷ *See, e.g.*, Letter from OECA Ass’t Adm’r, OECA to Sen. Feinstein (Apr. 2, 2020) (attached).

³⁸ OECA Policy on COVID-19 at 3.

³⁹ PanCAP Adapted U.S. Government COVID - 19 Response Plan at 4 (Mar. 13, 2020)

<https://int.nyt.com/data/documenthelper/6819-covid-19-response-plan/d367f758bec47cad361f/optimized/full.pdf#page=1>.

simply exercise enforcement discretion case-by-case, it can issue a temporary policy to this effect in narrow circumstances, or it can use other legal authority granted by Congress to address emergencies. EPA’s letter to Congress highlighted examples of past exercises of enforcement discretion during and after hurricanes that provide ways EPA has chosen to address compliance concerns it deemed valid—without the need for a broad, advance exemption to be promulgated into a permanent regulation.⁴⁰ Where a refinery operator can demonstrate that all available advance preparation to prevent releases occurred but compliance was still impossible due to a natural disaster, EPA enforcement discretion may well be warranted in limited circumstances, and a court may well apply similar discretion in a private enforcement suit pursuant to § 7604. However, EPA may not lawfully or rationally authorize non-compliance *by regulation*, before any such planning, before there is any such result, and before the facility makes all available attempts to prevent the violations occur, and in such broad terms that a facility loses any incentive to even attempt to comply.

Allowing regular malfunction exemptions and even broader exemptions for some of the most dangerous releases during times EPA attempts to deem so-called “force majeure events,” such as natural disasters, means there is no pollution control during these particularly dangerous times even though facilities can and should take additional precautions and have a strong incentive to avoid pollution during these periods that are particularly dangerous to human health. Thus, this objection is of “central relevance.” Therefore, EPA must grant reconsideration to correct its inaccurate characterization of the refinery regulations, to remove the unlawful malfunction exemptions, and to set limits that satisfy the Act’s requirement for emission standards to apply at all times.

II. EPA MUST GRANT RECONSIDERATION ON ITS NEW RATIONALE FOR THE PRESSURE RELIEF DEVICE PROVISIONS UNDER 7412(d)(2)-(3).

A. Inability to Raise the Objection in Comments.

In the 2015 Final Rule and the proposed reconsideration rule, EPA contended that the PRD work practice standards satisfy § 7412(h) and meet the floor and beyond-the-floor requirements of § 7412(d)(2)-(3) as § 7412(h) also requires. Petitioners demonstrated that the exemptions are not consistent with the best performers’ emission limitations as shown by the BAAQMD and SCAQMD Rules. 2016 Comments at 45-51. For example, Petitioners cited data showing that the best-performing facilities appear to have low releases of VOCs (including some HAPs) during PRD events. 85 Fed. Reg. at 6068 (citing 2016 Comments).

Perhaps aware that the rationale provided for the exemptions in the 2015 rule could not withstand scrutiny, EPA now advances new rationales and new information to justify the provisions allowing them, as discussed below. In particular, EPA attempts to ignore measured data available from PRD releases demonstrating EPA cannot satisfy § 7412(h)’s test to set a work practice standard instead of a numerical limit. EPA also attempts to justify the PRD provisions as satisfying § 7412(d)(2)-(3) even while admitting they do not actually include all of the restrictions in the SCAQMD and BAAQMD rules and by newly characterizing a PRD release

⁴⁰ OECA Letter to Feinstein at 2 (describing 41 examples of enforcement discretion, one fuel waiver, and 21 force majeure letters during Hurricanes Katrina and Rita, as well as other similar examples).

prohibition as a “beyond the floor” requirement. EPA also newly attempts to justify its unlawful exemption by pointing to a local “force majeure event” exemption and to costs.

Because EPA has just provided these new rationales in the 2020 Final Rule, it was “impracticable” within the meaning of Clean Air Act § 307(d)(7)(B) to object to these rationales and EPA’s reliance on them during the public comment period. 42 U.S.C. § 7607(d)(7)(B). In addition, the grounds for the below objection to the new rationales arose after the close of the comment period under § 307(d)(7)(B), when EPA unveiled its new rationales with the 2020 Final Rule.

B. Objection: EPA Has Failed to Demonstrate That The Work Practice Standards For Pressure Relief Devices Meet § 7412(h) and § 7412(d)(2)-(3) In Reliance on the California Local Air District Rules.

As a first new rationale, EPA contends in response to Petitioners’ 2016 Comments that, because it is setting a work practice standard, it can ignore the numerical emissions data that is available from the SCAQMD—which demonstrates best-performing sources are emitting low levels of HAPs from PRDs. 85 Fed. Reg. at 6069. Section 112(h), however, directs that work practice requirements must be consistent with § 112(d)—*i.e.* require the “maximum” degree of reduction in emissions that is “achievable” and, at a minimum, reductions to the level “achieved” by the best performing sources. The data EPA has chosen to ignore demonstrate that sources have achieved and can achieve far greater reductions than EPA’s work practice requirements require. Accordingly, EPA’s work practice requirements are unlawful and the agency’s decision to ignore these data is unlawful and arbitrary. EPA cannot satisfy § 7412(h) where such data have been measured and it is “feasible” to set a numerical limit, as those data show. That the data exist, and it has been “feasible” for some refineries and chemical plants to measure such emissions, demonstrates EPA could set a numerical limit rather than just a work practice standard. Thus, the PRD work practice standard violates § 7412(h). EPA gives no lawful or rational justification to explain how or why, when those PRD release data exist, it has not set any numerical limit at all on such releases. Section 7412(h) allows work practice standards only when measurement is infeasible and EPA’s new claim that it can ignore available data cannot possibly excuse it from making this showing. EPA is trying to point to the mere fact that it has created work practice standards as authorization for this action. What matters is, in view of the data, EPA has not shown it has met the § 7412(h) threshold not-feasible requirement to be able to create them “in lieu of” a numerical emission limit.

Second, EPA newly contends that, because the SCAQMD and BAAQMD rules do not include this, a prohibition or numerical restriction of zero on PRD releases would be a “beyond the MACT floor” requirement. 85 Fed. Reg. at 6071. However, data from sources operating under those rules show that the best-performing PRDs have *zero* emissions released, because they are not opened or are routed to a capture and control system. Petitioners’ 2016 Comments at 50-54; *see also* Attachment A to this petition; 85 Fed. Reg. at 6067 (describing those rules as covering best-performing sources); Memo at 2, <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0750> (describing CA rules as regulating relevant best-performing sources). EPA has failed to justify its decision to ignore the data, and has given no indication how it could characterize a low or zero limit on PRD releases as “beyond the floor,” rather than what

§ 7412(d)(3) requires when the record shows sources have often “achieved” no or low PRD releases.

In the 2020 Final Rule EPA recognizes that, even ignoring the numerical emission data available for PRDs, it has not set the most stringent measures applicable in both the BAAQMD and SCAQMD rules that it is describing as the “floor.” EPA newly admits that “the final standards for PRDs do not exactly mirror” either the SCAQMD provisions or the “more stringent” BAAQMD provisions. 85 Fed. Reg. at 6069. EPA restates what it did: cherrypicking the parts of each set of rules that it wished to include during malfunctions. Petitioners support the “enhancements” EPA has included from the BAAQMD and SCAQMD rules. However, EPA gives no lawful or rational justification for allowing “a higher number of releases prior to considering the owner or operator to be in violation of the work practice standard,” than even the SCAQMD Rule 1173 allows. *Id.* EPA says it is doing this because it is requiring a root cause analysis for PRD releases of any size (whereas the SCAQMD does not require this for releases less than 500 lbs/day). *Id.* EPA does not demonstrate, however, how allowing more uncontrolled releases satisfies § 7412(d)(2)-(3). EPA states this is “reasonable”; but the statute does not allow EPA to choose any action in the range of what is “reasonable.” *Id.* The statute directs EPA to set emission standards that assure the average emission limitation “achieved” by the relevant best-performers. EPA has failed to do this, by failing to set rules that are at least as stringent as the rules to which it points that the best-performers are meeting. EPA also has failed to do this by refusing to require more preventative measures (BAAQMD requires 5 instead of 3) and failing to adopt the other additional requirements in the more stringent BAAQMD rules. EPA gives no lawful or rational justification for refusing to set more stringent limitations on PRD releases in order to satisfy § 7412(d)(2)-(3).

EPA’s new rationale that it can ignore the numerical emission data available because it is labeling a selection among some parts of state work practice standards as the “floor” and a zero limit or PRD release prohibition as “beyond-the-floor” fails to satisfy the Act or fundamental requirements of reasoned decisionmaking. 42 U.S.C. § 7607(d)(9). EPA appears to have simply chosen what it wishes to require from the SCAQMD and BAAQMD rules and labeled that combination of requirements the “floor.” Because it wishes not to recognize the data show zero emissions are the true “floor,” due to cost, it has labeled a PRD release prohibition “beyond-the-floor.” This is not how § 7412(d)(2)-(3) works. EPA may not consider cost in determining what the “floor” is – rather, the Act already includes the built-in cost determination Congress intended by considering what the best-performers have “achieved.” EPA has unlawfully and arbitrarily labeled its preferred choice of parts of the SCAQMD and BAAQMD rules as “floor” and refused to recognize that it must further restrict emissions from PRDs, without consideration of cost, as the Act directs.

Indeed, EPA now admits, for the first time, that the primary reason it is not setting the PRD limit at zero as it had originally proposed is simply due to “cost” and “economic factors.” 85 Fed. Reg. at 6070, 6071. Yet cost of industry compliance is not a lawful factor for EPA to consider under § 7412(d)(3). When the data demonstrate that prohibiting emissions from PRDs reflects the emission limitation “achieved” by the best-performing sources, EPA cannot refuse to require this due to cost. Further, even EPA’s cost rationale is irrational. At least some refineries operating under the BAAQMD and SCAQMD rules have achieved no or very low PRD releases,

under cost-effective operating conditions as the 2016 Comments show. *See also* Attachment A to this petition. Thus EPA may not lawfully or rationally use cost as a justification not to prohibit or set a low limit on these emissions.

EPA also cites “environmental disbenefits,” in the form of greenhouse gas emissions and nitrogen oxide, from the need to potentially install additional flares. 85 Fed. Reg. at 6070, 6071. Yet EPA fails to demonstrate that those would be significant in view of the SCAQMD data showing that the best-performing sources have very few or no PRD emissions, or the new data now available from refineries themselves now attached to this petition showing PRD releases should be fewer and lower than EPA estimated. Further, EPA has not considered ways to reduce or prevent such disbenefits, through means other than flares, such as additional preventative measures (which the BAAQMD requires—5 instead of 3), flare gas recovery systems, or through additional methods to control and reduce emissions from flares themselves (which the agency has unlawfully and arbitrarily relaxed here instead of ensuring apply at all times). Thus EPA has failed to justify refusing to satisfy § 7412(d)(2)-(3) based on this contention.

As a third novel rationale, EPA newly attempts to justify the “force majeure event” exemption for PRDs and flares by contending that “a clause included in the SCAQMD rule [1173] . . . served as the basis for the MACT standard.” 85 Fed. Reg. at 6070. This is the first time EPA has attempted to justify its national exemptions for refinery PRD releases linked to such events, by citing to a local air district rule’s exemption. Rule 1173 includes an exemption for releases that a facility has “demonstrated to the satisfaction of the [SCAQMD] Executive Officer” to “result from natural disasters, acts of war, or external power curtailment beyond the refinery’s control.”⁴¹

Just because a local rule includes an exemption from a local rule does not mean that EPA may codify that same exemption in the *federal* standards. *See, e.g., U.S. Sugar*, 830 F.3d at 608 (“If anything, the statutory language on its face prevents the EPA from taking into account the effect of potential malfunctions when setting MACT emission standards.”). Section 7412(d)(2)-(3) does not allow EPA to turn local exemptions into national ones. Doing so violates the Act’s requirement for “continuous section 112-compliant standards,” just as the D.C. Circuit has held the SSM exemption and affirmative defense to civil penalties for malfunctions did. *Sierra Club*, 551 F.3d at 1027-28; *NRDC*, 749 F.3d 1055. In those cases there were also examples of local or state rules that had similarly implemented those exemptions, and that was irrelevant to the court’s recognition that the regulatory provisions EPA promulgated for the exemption and affirmative defense were unlawful. That the local rule includes an exemption does not mean that sources cannot meet PRD restrictions, and avoid releases, during all or most of the exempted types of incidents. EPA has not shown that it has evaluated use of the SCAQMD exemption to consider either how it has affected implementation of Rule 1173 and whether sources have actually attempted to take advantage of that exemption (or not done so because they have

⁴¹ SCAQMD Rule 1173(l)(5) (“Atmospheric PRD releases demonstrated to the satisfaction of the Executive Officer that result from natural disasters, acts of war or terrorism, or external power curtailment beyond the refinery’s control, excluding power curtailment due to an interruptible service agreement, shall not be subject to the provisions of paragraphs (h)(6) and (h)(7).”).

complied during such incidents), nor the health and environmental impacts of that exemption locally (where facilities have taken advantage of it).

Furthermore, the SCAQMD clause on which EPA now relies is narrower and more restrictive than the broad “force majeure event” definition and exemption that EPA promulgated in this Rule. *Compare* SCAQMD Rule 1173 *with* 40 C.F.R. § 63.641.⁴² The SCAQMD does not apply to flares (as EPA’s definition does), only to releases from PRDs. SCAQMD Rule 1173. Further, the examples EPA’s definition includes go beyond what Rule 1173 allows: e.g., a fire or explosion at a near or adjoining facility. 40 C.F.R. § 63.641. Most importantly, the SCAQMD rule is far narrower. It does not include any “event beyond the refinery owner or operator’s control”; it is limited to a specific list of events. EPA’s rule gives no discrete set of incidents and leaves an indefinite set of exemption incidents up to industry and EPA to determine, without public notice-and-comment, or judicial review (as would occur in an enforcement case pursuant to § 7604 or 7413). EPA’s rule arrogates far too much discretion to the Administrator—far more than Rule 1173 allows.

This is also more than the statute allows, as discussed above (as EPA cannot lawfully set a force majeure event exemption; it is just another variation of an unlawful malfunction exemption, as discussed above). Yet, even if EPA could create such an exemption, it has failed to show that its rule satisfies § 7412(d)(2)-(3) when it allows more pollution and more releases than Rule 1173, which it is characterizing as the floor. It is also irrational and capricious because EPA is allowing sources to have more releases in additional circumstances than the rule on which it is relying, and because this will lead to greater emissions and health impacts. It is also arbitrary because the EPA definition is overbroad and there are insufficient criteria for EPA or the public to determine what is within the refinery owner or operator’s control. For example, the CSB and EIP reports have provided numerous ways a facility can control pollution and prevent PRD and other releases even where there is a hurricane or other form of natural disaster. That a facility cannot prevent the natural disaster does not mean it could not avoid the release; EPA has failed to demonstrate otherwise.

The fact that Rule 1173 has an exemption thus does not save EPA’s exemption. EPA has failed to lawfully and rationally justify such a broad exemption that could allow a facility to evade the standards simply because there is a hurricane, without showing it did all that was possible to prevent the release, notwithstanding high winds or rain. EPA has not even evaluated any specific examples of a force majeure event release prior to the 2015 Rule or afterward, or shared any information to give the public any understanding of how this provision would work or is working, now that it has been in place and EPA has been allowing these exemptions. EPA must grant reconsideration and consider actual releases during and after Hurricane Harvey, for

⁴² 40 C.F.R. § 63.641: “Force majeure event means a release of HAP, either directly to the atmosphere from a pressure relief valve or discharged via a flare, that is demonstrated to the satisfaction of the Administrator to result from an event beyond the refinery owner or operator’s control, such as natural disasters; acts of war or terrorism; loss of a utility external to the refinery (e.g., external power curtailment), excluding power curtailment due to an interruptible service agreement; and fire or explosion originating at a near or adjoining facility outside of the refinery that impacts the refinery’s ability to operate.”

example, to determine how much of the HAPs released were actually preventable and require those steps to be taken—*before* deciding whether or not to allow any type of force majeure event exemption.

Finally, the SCAQMD has stated plans to further strengthen its Rule 1173. Thus EPA cannot assume that Rule alone still reflects the floor.⁴³

EPA must reconsider the Refinery Rule to further strengthen the PRD requirements and ensure that it sets standards that satisfy § 7412(d)(2)-(3)) as discussed in these comments.

C. This Objection Is Of “Central Relevance” to the Rule Because It Demonstrates the Inadequate Stringency of the Pressure Relief Device Standards.

Because this objection goes directly to EPA’s rationale for not setting more stringent PRD releases as required by the Clean Air Act, it is of “central relevance” to the outcome of the rule. *Id.*

Furthermore, EPA’s failure to restrict PRD emissions routinely, and to prohibit them (including during malfunctions) is particularly harmful and unlawful in view of new data that has come out since the comment period on the 2016 proposal closed.

Since that time, new data has come out in compliance reports submitted by refineries to some states under the existing rule. The analysis that Petitioners were able to perform based on the reports they could compile (attached as Attachment A), show that the best-performers indeed emit low levels of PRD emissions. Available refinery compliance reports from 2019 suggest that while EPA is allowing each PRD to have one or two uncontrolled emission releases routinely, every three years, and any number connected to force majeure events, among the reports from approximately 998 uncontrolled PRDs at certain refineries, *there was only one small, three-minute PRD release to the atmosphere. See* Attachment A Tbl. A (provided at the end of this petition). Thus, it is very likely that if EPA recognized the need to set a numerical limit on PRDs and performed the requisite analysis under § 7412(d)(2)-(3), it would find these emissions are much lower and that releases are less frequent than the record showed even at that time of the 2015 Final Rule. Even if EPA does not measure or assess the specific numerical amount of emissions and looks only at the number of releases per year, it would have to further reduce these emissions based on the actual data available on the low numbers of such releases.

The available data further show the need to restrict emissions connected to force majeure events. The data collected from 2019 did not include data during any such events known to

⁴³ SCAQMD, Rule and Control Measure Forecast (Mar 6, 2020), <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2020/2020-mar6-016.pdf?sfvrsn=6>, attached (stating that SCAQMD is considering proposed revisions to “improve the effectiveness, enforceability, and clarity of the rule. Other proposed amendments may be needed to further reduce emissions from operations, implement early leak detection, odor minimization plans, and enhanced emissions and chemical reporting”); *see also* SCAQMD, Community Emissions Reduction Plan, Wilmington, Carson, West Long Beach (Sept. 2019), <http://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/cerp/final-cerp-wcwlb.pdf?sfvrsn=8>.

Petitioners. Therefore, those may be the primary time periods when PRD releases are likely to be greatest and most harmful—showing even more the need for EPA not to allow uncontrolled PRD emissions and releases without restriction or consequences connected to such periods. The OIG and EIP reports (cited above) summarizing the high amounts of HAPs and co-emitted pollutants from refineries and chemical plants during and after Hurricane Harvey illustrate the strong need for EPA to remove the force majeure event exemption. These data show that, instead, EPA must require additional preventative and corrective action measures for HAP releases connected to hurricanes in hurricane-prone areas like the Gulf or other natural disasters such as earthquakes in earthquake-prone areas (like California and Utah).

The 2020 EIP Report on fence-line monitoring and the Addendum to this report show higher HAP emissions than EPA originally estimated would reach the fence-lines in neighboring communities. These data also show the strong need for EPA to ensure effective control of PRD releases—and to fully satisfy § 7412(h) and § 7412(d)(2)-(3) for PRDs.

Therefore, EPA must convene proceedings to reconsider the PRD work practice standards, including the exemptions from such standards.

III. EPA HAS FAILED TO DEMONSTRATE THAT THE WORK PRACTICE STANDARDS FOR FLARES MEET § 7412(d)(2)-(3).

A. Inability To Raise the Objection in Comments

In the 2014 Proposed Rule and 2015 Final Rule, EPA proposed and finalized flare work practice standards pursuant to § 7412(d)(2)-(3) that included operational and monitoring requirements to assure that flares work more efficiently. 79 Fed. Reg. at 36,900; 80 Fed. Reg. at 75,182, 75,213 (“we continue to believe that these revisions are appropriate under CAA sections 112(d)(2) and (d)(3).”). EPA finalized these important improvements based on significant data in the record showing they are needed to improve flare efficiency, including an EPA study on flares.

In the 2015 Rule, without notice-and-comment, EPA added an emergency flaring exemption into the work practice standards, described as a separate standard when flares are operating “above smokeless capacity.” 80 Fed. Reg. at 75,187 (“we are establishing work practice standards in the final rule for PRD releases and emergency flaring events, which under the proposed rule would not have been allowed.”); *id.* at 75,212. This is a new malfunction-based exemption. As EPA stated: “We received a number of comments stating that the no visible emissions limit and the flare tip velocity limit cannot be met during large malfunctions and emergency shutdown events.” *Id.*

In the 2016 Reconsideration Proposed Rule, EPA stated that the agency “determined that it was appropriate to set different standards for when a flare is operating below its smokeless capacity and when it is operating above its smokeless capacity,” 81 Fed. Reg. at 71,665, but did not attempt to show if or how these emergency flaring work practice standards satisfy § 7412(h) or meet the floor and beyond-the-floor requirements of § 7412(d)(2)-(3) as § 7412(h) also requires. Therefore, EPA finalized a new provision that removed applicability of the maximum flare tip velocity and no-visible emissions requirements once or twice every three years, and any

time there is a “force majeure event.” Petitioners demonstrated that (even if they could otherwise be allowed, which they cannot because they are unlawful exemptions) the new emergency flare provisions are not consistent with the best performers’ emission limitations on flares. 2016 Comments at 51-57. For example, Petitioners cited data showing that there is no evidence that the best-performing sources have a hydraulic load flaring event every 4.4 years. *Id.* at 53. Industry data contending that this is “on average” how often facilities have this kind of event does not satisfy § 7412(d)(3) (which sets the floor at the average emission limitation achieved by the relevant best performers, not the industry average).

In the 2020 Final Rule, EPA advances new rationales to try to justify the exemptions it has promulgated for emergency flaring. 85 Fed. Reg. at 6073. As a major change, EPA now states that, although EPA has relied on § 7412(d)(2)-(3) to set the flaring operational and monitoring requirements, it need not meet this test directly. EPA contends this is not required because “the flare is not a specific emission source within Refinery MACT 1 standards.” 85 Fed. Reg. at 6073. EPA further states that the agency “do[es] not set [emission] limits for thermal oxidizers, baghouses, or other control devices that we desire to remain operational during malfunction events to limit pollutant emissions to the extent practicable.” *Id.* EPA states that it did not set the flare standards to ensure control of flares, but to assure 98-percent destruction or reduction efficiency at the emitting equipment routed to the flares.

Because EPA only provided this new rationale in the 2020 Final Rule, it was “impracticable” to object to EPA’s rationale during the public comment period. 42 U.S.C. § 7607(d)(7)(B). In addition, the grounds for our below-discussed objections arose after the close of the comment period under § 307(d)(7)(B), when EPA unveiled its new rationale with the 2020 Final Rule.

B. Objection: EPA’s New Rationale That It May Set Standards for Flares That Do Not Satisfy § 7412(d)(2)-(3) Is Unlawful and Arbitrary.

EPA is incorrect that it need not satisfy § 7412(d)(2)-(3) for flares because there are underlying emission standards that apply to equipment routed to flares, and flares are being used as a control device.

Petitioners support EPA’s action in the 2015 Rule to set important new flare operational and monitoring requirements to assure compliance with the underlying standards. Generally, those standards require the equipment to meet 98% destruction efficiency for HAPs. EPA found significant problems achieving that level of HAP destruction and the improvements should reduce HAP emissions from the underlying equipment routed to the flare.

However, it is indisputable that flares are not merely control devices—they are also emission points. In the process of destruction of certain HAPs, they create new HAPs—the products of incomplete combustion.⁴⁴ Thus they are emitting new HAPs into the air. The Act requires EPA to set a limit on all emitted HAPs. 42 U.S.C. § 7412(d)(1)-(3); *Nat’l Lime Ass’n v. EPA*, 233 F.3d 625, 641 (D.C. Cir. 2000). EPA must set a floor and consider setting beyond the

⁴⁴ See, e.g., 2014 Comments at 15 (PAHs); 2016 Comments at 23 (describing process where flares release soot, including HAPs, as part of combusting other HAPs).

floor standards, just as Petitioners explained in 2014 and 2016 Comments. By refusing to set limits, as the Act requires, on the total HAPs released from flares and ignoring the increased emissions that occur during smoking flares, EPA is violating the Act.

EPA's contention that the 98% efficiency is all that matters—and that this applies during smoking flaring periods, 85 Fed. Reg. at 6072—is not enough to satisfy the Act. The Act requires EPA to set limits on each hazardous air pollutant that a source category emits, and it requires these limits to reduce the pollutant or pollutants to which they apply to the maximum achievable degree. 42 U.S.C. § 7412(d)(2). At a minimum, it requires EPA's limits to reflect the actual emission levels achieved for the pollutant or pollutants to which they apply by the sources that are best performing with respect to such pollutant or pollutants. *Id.* § 7412(d)(3). A standard that merely reduces the total volume of hazardous air pollutants by a percentage does not—and cannot possibly—satisfy these requirements. For example a source achieving 98-percent reduction of its total emissions of hazardous air pollutants might be achieving no reduction at all in emissions of pollutants such as dioxins or polycyclic organic matter that are emitted at low volumes, even though significant reductions in such pollutants are “achievable” and in fact being “achieved” by some sources.

Further, even if EPA is correct that 98% of the HAPs sent to the flare are destroyed, in a hydraulic flaring event, much greater amounts of gases are sent to the flare. There is no underlying limit, based on the “average emission limitation achieved” by the relevant best-performing flares or sources. Importantly, the more a flare combusts, the more new HAP pollution it creates from the process of incomplete combustion. Thus, EPA is allowing much greater total amounts of HAPs to go into the air by allowing visible flaring not to constitute a violation.

EPA's new rationale shows it has not even attempted to satisfy § 7412(d)(2)-(3), even though it has appropriately relied on that provision for the flare improvements, and has recognized it must strengthen the Refinery Standards pursuant to that provision in this rulemaking. *See, e.g.*, 85 Fed. Reg. at 6066 (“The December 2015 rule also finalized changes to Refinery MACT 1 and 2 pursuant to CAA section 112(d)(2) and (3), notably revising the requirements for flares”); *see also* 79 Fed. Reg. at 75,182 (summarizing proposal and final rules as including “revising Refinery MACT 1 and 2 pursuant to CAA section 112 (d)(2) and (3), including revising requirements for flares”). EPA must perform the floor and beyond-the-floor analysis required to ensure that refinery flares cannot emit more than the Act allows, no matter how much HAP stream a facility sends to the flare. Without limits on flares pursuant to § 7412(d)(2)-(3), EPA is allowing virtually unlimited levels of HAPs to be released through these emission points, in violation of the Act.

EPA's new rationale is also arbitrary because it is acting pursuant to § 7412(d)(2)-(3) but stating that it need not meet the stringency test applicable to actions under this provision. EPA gives no explanation, much less a reasonable one, for how that could be possible.

EPA's new argument is irrational as well because the fact that a flare is being used as a control device for other equipment and is assisting that equipment in reducing its emissions does not allow the flare itself to release unlimited amounts of HAPs. Even if this were otherwise

reasonable, EPA has failed to justify how it can avoid setting any limits on the *new* HAPs a flare creates. The other control devices that EPA cites as examples—thermal oxidizers and baghouses—are purely HAP control devices. They do not create new HAPs in the process of destroying others. Thus, pointing to a flare’s use as a control device does not justify EPA’s failure to satisfy § 7412(d)(2)-(3) by setting emission limits to assure the “maximum achievable degree of emission reduction” from flares, that it is at least as stringent as the “average emission limitation achieved” by the best-performing flares. Notably, when EPA grants reconsideration to recognize health risks are unacceptable and must be further reduced, EPA must also strengthen limits on flares for the independent reason that doing so would help to assure the “ample margin of safety to protect public health” that is needed to satisfy § 7412(f)(2)).

Moreover, EPA is also violating the Act by creating a separate subcategory of flares and allowing unlimited pollution from those flares: those operating above the smokeless capacity and setting a different, weaker standard for those flares. Section 7412(d)(1) and § 7412(h) do not allow EPA to categorize sources or emission points by whether or not it is having a malfunction. EPA has some authority to “distinguish among classes, types, and sizes of sources,” in setting a standard reflecting the maximum degree of emission reduction. 42 U.S.C. § 7412(d)(1). But EPA may not categorize sources by whether or not they are controlled.⁴⁵ The flares are all the same type of source. The only difference is that some are smoking as part of a malfunction event, because they do not have a flare gas recovery system or other methods in place to prevent such smoking even when a hydraulic flaring event occurs. Thus EPA has unlawfully set a weaker standard for smoking flares than for all other flares. EPA must set standards that satisfy § 7412(d)(2)-(3) for all flares, rather than subcategorizing them in a way that puts all of the best-performing sources in one group and the worst-performing, smoking flares in the other group.

Finally, in the Ethylene Production Rule, EPA acknowledged that flares are able to meet the maximum flare tip velocity at all times, and decided not to exempt facilities from this requirement during the smoking flare exemption.⁴⁶ Based on that new action for a similar source category, EPA should further strengthen the flare requirements for refineries here, on reconsideration. Although EPA should remove the emergency flaring exemptions completely, it

⁴⁵ See 42 U.S.C. § 7412(d)(1) (allowing EPA only to “distinguish among classes, types, and sizes” of sources); see also *Davis Cty. Solid Waste Mgmt. v. EPA*, 101 F.3d 1395, 1398 (D.C. Cir. 1996), opinion amended on reh’g, 108 F.3d 1454 (D.C. Cir. 1997) (“[T]he MACT floor will obviously be lower if the category includes more units with advanced pollution control devices than if the category contains fewer units with such devices”); *Sierra Club v. EPA*, 895 F.3d at 15 (“But once the EPA identifies a source in a category it must set the MACT floor based on the ‘best’ performing sources.”); *id.* (“The EPA has the authority to ‘distinguish among classes, types, and sizes’ of emissions sources and set separate MACT floors for each.”).

⁴⁶ EPA, National Emission Standards for Hazardous Air Pollutants: Generic Maximum Achievable Control Technology Standards Residual Risk and Technology Review for Ethylene Production, Final Rule, Pre-Publication Notice submitted to the Federal Register (signed Mar. 12, 2020), https://www.epa.gov/sites/production/files/2020-03/documents/frn_ethylene_production_rtr_final.pdf (finalized “provisions that require compliance with the maximum flare tip velocity operating limit at all times, regardless of whether you are operating above the smokeless capacity of the flare,” because the agency “acknowledges the data we received from ACC’s survey identifies zero exceedances of the flare tip velocity during a smoking event; and . . . [the] proposed determination of the frequency of these events at the best performing sources is not supported.”).

would be unlawful and arbitrary for EPA not to, at least, make that same change here (requiring sources to comply with the maximum flare tip velocity at all times), for similar reasons EPA did in Ethylene Production. Because that Rule has not yet been published in the Federal Register, Petitioners are unable to attach any supporting material EPA may rely on for that change here, but incorporate it by reference into this record because EPA has it in its possession and can and must consider it in concert with this reconsideration petition.

C. The Objection Is of Central Relevance to the Outcome of the Rule Because It is the Core Factor in the Stringency of the Flare Requirements.

Because this objection goes directly to the illegality and arbitrariness of EPA's rationale for not setting stronger flare standards as required by the Clean Air Act, it is of "central relevance" to the outcome of the rule. *CCAN*, 952 F.3d at 322 (finding objection that raised concerns that "go to the very legality" of a standard centrally relevant).

Furthermore, EPA's failure to restrict flare emissions more stringently is particularly harmful and unlawful in view of new data that has come out since the comment period on the 2016 proposal closed on PRDs at refineries where reports are available (as discussed above in Part II and Attachment A). The available data from refineries that have reported on PRD releases under the 2015 Rule show the ability to restrict emissions from flares for similar reasons.

And, data from Hurricane Harvey and other serious releases in recent years show how necessary it is for EPA to restrict emissions from flares connected to force majeure events rather than providing an advance free pass to pollute. The data collected from 2019 did not include data during any such events known to Petitioners. Therefore, those may be the primary time periods when flare releases are likely to be greatest and most harmful—showing even more the need for EPA not to allow uncontrolled PRD emissions and releases without restriction or consequences connected to such periods. The OIG and EIP reports summarizing the high amounts of HAPs and co-emitted pollutants from refineries and chemical plants during and after Hurricane Harvey illustrate the strong need for EPA to remove the force majeure event exemption, and instead require additional preventative and corrective action measures for HAP releases connected to hurricanes or other natural disasters such as earthquakes in earthquake-prone areas (like California and Utah).⁴⁷

Further, in the newly signed Final Rule for Ethylene Production, EPA strengthened the requirements for flares by removing the exemption for maximum flare tip velocity requirements for these sources. In that rule, EPA appropriately proposed and finalized the flare operational and monitoring requirements that it had finalized for refineries in 2015 because ethylene production sources are similar to refineries in how they use flares and there was the same need to improve efficiency. Therefore, it is important that in that rule EPA has recognized the need to remove that part of the smoking flare exemption. Now, although Ethylene Production allows smoking flares to have visible emissions during malfunctions (which is unlawful and arbitrary as discussed in comments there), that rule is stronger than the 2015 Refinery Rule on which it is based. EPA should take similar steps here, on reconsideration, to ensure the maximum flare tip

⁴⁷ See reports cited, *supra* notes 28, 31.

velocity requirements apply at all times (not just when a flare is operating below its smokeless capacity). The new action EPA has taken in the Ethylene Production Rule provides further evidence of the “central relevance” of the smoking flare exemptions for Refineries. If EPA were to grant reconsideration on this issue, it would likely remove the exemption completely because it is unlawful and arbitrary, but it could not avoid at least strengthening the Refinery Rule to be similar to the Ethylene Production Rule.

Therefore, EPA must convene proceedings to reconsider the new rationale for the smoking flare exemptions and flare work practice standards, and these standards that rely on that rationale.

IV. EPA MUST GRANT RECONSIDERATION ON ITS NEW RATIONALES FOR FINDING CANCER RISKS ACCPETABLE, AND ON ITS RISK DETERMINATION BASED ON THESE RATIONALES.

A. Inability To Raise the Objections in Comments.

In the 2015 Final Rule, EPA determined that the residual health risks its standards allow refineries to cause nearby communities, including the highest risks to the “individual most exposed” are “acceptable.” 80 Fed. Reg. at 75,190. EPA found the MIR, or maximum individual cancer risk, from inhalation is 100-in-1 million, from regular inhalation of refinery HAP emissions. This is right at the benchmark that EPA deems presumptively unacceptable for cancer risk from toxic industrial air pollution.⁴⁸ But, that was *not* the only cancer risk EPA found from refinery pollution. EPA also found that these sources cause significant *additional* cancer risk through the ingestion pathway of exposure, for people exposed to locally grown vegetables or fish. Final RRA at 49-50. Plus, EPA found that the non-routine or malfunction emissions it is allowing from the PRD and smoking flare exemptions cause *even more* cancer risk. Final RRA at 52. So to reach its “acceptable” risk conclusion under § 7412(f)(2), EPA had to try to find a way to ignore the fact that the cancer risk is actually *above* the level it deems presumptively acceptable: 100-in-1 million.

In their reconsideration petition and 2016 Comments, Petitioners called for EPA to follow its own guidelines and add this cancer risk together, to recognize the cancer risk is actually higher than the agency’s own benchmark for presumptive acceptability. 2016 Comments at 67-70.

In the 2020 Final Rule, EPA refused to sum the cancer risk, but implicitly recognizing that it lacked justification for doing so in view of its own guidelines, EPA tried to come up with a new rationale. To try to avoid finding risk to be above the presumptively acceptable level, EPA newly claims that it may choose not to add together the cancer risks that the refinery pollution causes, in reliance on new, conclusory assumptions that run counter to the Act, EPA’s own guidelines, and the best available science. 85 Fed. Reg. at 6075. EPA also attempts to change its own benchmark for presumptive acceptability by contending that the cancer risk shown here

⁴⁸ That benchmark is far too high and should be reduced, as Commenters’ 2014 Comments discussed at 90-94.

above 100-in-1 million does not matter, because EPA only “present[s]” cancer risk relevant “to one significant digit.” *Id.*

Because EPA has suddenly provided these rationales in the 2020 Final Rule, it was “impracticable” within the meaning of Clean Air Act § 307(d)(7)(B) to object to EPA’s rationales during the public comment period. 42 U.S.C. § 7607(d)(7)(B). In addition, the grounds for our below-discussed objections arose after the close of the comment period under § 307(d)(7)(B), when EPA unveiled its new rationale with the 2020 Final Rule, and so reconsideration is required.

B. Objection: EPA’s New Rationales for Refusing to Add Cancer Risk Are Unlawful and Unsupported by Science or the Record and Fail to Justify EPA’s § 7412(f)(2) Determination.

EPA’s own risk assessment policy and guidelines recognize that carcinogenic risk adds up with each increment of exposure. 2016 Comments at 67-69 (citing scientific sources; EPA guidelines). There is no safe level of exposure to carcinogens—they have no threshold.

Yet, EPA refused to add each type of cancer risk to come up with a total in this risk assessment. Doing so would increase the cancer risk above EPA’s presumptive level of acceptability, to at least 106-in-1 million, based on what the emission standards allow. 2016 Comments at 68. EPA did not add the cancer risk from routine inhalation (100), with the cancer risk from non-routine inhalation (2), and the cancer risk from ingestion or “multipathway” exposure to the highest PBT-risk causing pollutant which are products of incomplete combustion: PAHs and dioxins (4). Final RRA at 49, 52.

EPA for the first time attempts to justify refusing to come up with a cancer risk total by contending that its risk assessment for risk overestimates risk. EPA states that the risk from allowable emissions under the standard (“MACT-allowable”) is based on “several health protective assumptions,” and that the “actual” risk may be no higher than “approximately 60-in-1 million.” 85 Fed. Reg. at 6075. EPA also says that the non-routine inhalation cancer risk assessment also relies on “health protective assumptions.” *Id.* EPA says “[b]ecause of the conservative nature of these screening analyses, the EPA does not typically add their results.” *Id.* But the fact that EPA’s assessment includes certain health-protective assumptions and components does not explain why EPA refuses to do the basic math needed to holistically assess cancer risk from refinery pollution.

EPA’s refusal to sum cancer risk violates the Act and is arbitrary. The objective of § 7412(f)(2) and the health risk rulemaking is to require EPA to take an advance, precautionary approach to assess risk and protect public health from toxic air pollution *before* harm occurs. Health-protective assumptions (also known as scientific “defaults”) and uncertainties are always present in risk assessment where the goal is to attempt to predict and prevent future harm. Congress understood that there would likely be scientific limits and uncertainties that would make it difficult or impossible to assess the exact amount of additional cancer risk a person faced from a given industrial source category. So that scientific gaps or risk assessment uncertainties do not inadvertently lead to dangerous gaps in health protection, Congress directed EPA to push forward: not just to take the most basic, lowest level of action possible, but to assure standards

provide “an ample margin of safety to protect public health,” 42 U.S.C. § 7412(f)(2). Further, the Act does not just require this as a general matter, but it directs EPA to protect the “individual most exposed”—based on the *maximum* potential risk to human health. *Id.* In the context of public health protection and to meet the statutory test that focuses on the “most exposed” and requires an “ample margin of safety,” the statute favors a conservative approach in the face of any uncertainties.

Here, EPA cannot rationally assess risk based on record facts and the science, and then turn around and ignore its own health risk assessment results as too “health protective” to be useful. EPA recognized the need to ask key questions and account for the risks that its assessment found. The agency cannot justify now ignoring the answers, just because they point to the need for more stringent regulations. And, overall, EPA guidelines direct that “the primary goal of EPA actions is protection of human health; accordingly, as an Agency policy, risk assessment procedures, including default options that are used in the absence of scientific data to the contrary, should be health protective.”⁴⁹

Therefore, EPA appropriately used certain health-protective assumptions or defaults in its risk assessment, and they do not justify sidelining that risk assessment at the regulatory step in this rulemaking. Its new rationale that the numbers it found are conservative or “health protective” and may be lower does not justify refusing to add together carcinogenic risk or to recognize that this risk is above EPA’s benchmark of unacceptability. Due to gaps that remain in the agency’s risk assessment approach, EPA likely undercounts, not overestimates, risk, showing how important the assumptions it does use are.⁵⁰

Finally, EPA’s new “one significant digit” rationale is unlawful and arbitrary in itself. The 100-in-1-million benchmark for maximum individual risk was established by EPA itself, was accepted as reasonable (at EPA’s urging) by the D.C. Circuit, and is part of a risk approach that the court found Congress intended to affirm as a method from which EPA could not backslide when it enacted the Clean Air Amendments of 1990. Even if EPA could somehow find health risk acceptable where cancer risk was greater than 100-in-1 million, it would have to provide a reasoned explanation based on the record and full picture of health risks communities face, and demonstrate how this could be consistent with the Act. EPA has not done that here. Instead, EPA now takes the position—without any explanation or justification whatsoever—that because a maximum individual cancer risk of 106-in-1 million, or 110-in-1-million, or even higher, is within one significant digit of 100-in-1-million it is presumptively acceptable. EPA has failed to acknowledge or explain this departure from its longstanding policy to recognize that risk is no longer presumptively “acceptable” if it is above 100-in-1 million, nor how this could

⁴⁹ EPA’s 2005 Guidelines for Carcinogen Risk Assessment, https://www.epa.gov/sites/production/files/2013-09/documents/cancer_guidelines_final_3-25-05.pdf.

⁵⁰ As discussed in Petitioners’ 2014 and 2016 comments, EPA’s risk assessment approach is not the most health protective or conservative—it actually contains serious gaps in assessing emissions and risk, which means it likely *underpredicts* the cancer and other health risks communities face from refinery pollution. Petitioners have called for EPA to follow recommendations of the NAS and SAB that would further *strengthen* its risk assessment to account for additional risks it currently ignores or predicts to be lower than the best available scientific information would indicate.

comport with the caselaw recognizing that as the “maximum excess risk,” with 1-in-1 million “the aspirational goal” under the statute. *See, NRDC v. EPA*, 529 F.3d at 1082.⁵¹ To attempt to ignore the excess cancer risk above its presumptive benchmark of 100-in-1 million and try to contend the risk is actually no higher than that, EPA would have to explain the confusing and unsupported rationale itself – and also provide a lawful and reasoned justification for the change. *See, e.g., Fox v. FCC*, 556 U.S. at 515; *State Farm*, 463 U.S. at 42. EPA has done neither and thus has failed to justify ignoring the significant additional cancer risk that its own assessment shows communities are experiencing. Because in fact the cancer risk *is* above 100-in-1 million as the math shows, EPA has violated § 7412(f)(2) by refusing to reduce this risk by strengthening the emission standards.

As a second new rationale on its cancer risk determination, EPA attempts to justify its refusal to add cancer risks together by contending that “it is highly unlikely that the person exposed to the highest inhalation risk is the same person exposed to the highest refined multipathway (ingestion) risks.” 85 Fed. Reg. at 6075. EPA cites no evidence whatsoever for this conclusion. It is completely unsupported and irrational. As such, it does not meet the fundamental principles of reasoned decisionmaking or the best available science. EPA cannot rely on it as a basis to refuse to even try to count the health risks as § 7412(f)(2) requires. By doing so, EPA shows its decision not to set stronger emission limits is both unlawful and arbitrary and capricious.

The Act directs EPA to protect “the individual most exposed.” 42 U.S.C. § 7412(f)(2). That term necessarily requires EPA to account for the highest possible cancer risk to the nearby community from any route of exposure—and to assume that an “individual” is experiencing that risk. Refusing to look at the maximum potential exposure for an individual from aggregate cancer risk, when it is scientifically well-known that community members both breathe air and take in carcinogenic pollution through ingestion, violates the Act and is arbitrary.

Further § 7412(f) standards must be “based on the most current scientific knowledge and on sound scientific judgment.”⁵² As the National Academies of Sciences recognized: “Because exposure to a specific chemical is rarely confined to a single route (although one route might dominate), *the total exposure must be calculated by summing air (inhalation), dermal, and dietary (food and water) intakes.* For example, pollutants that begin as ‘air pollutants’ can generate substantial exposures through other media if they can move from air to water, soil, or

⁵¹ *See also, e.g.,* EPA’s Residual Risk Report to Congress at 8 (1999) https://www.epa.gov/sites/production/files/2013-08/documents/risk_rep.pdf (“the Administrator believes that an MIR [maximum individual risk] of approximately 1 in 10 thousand should ordinarily be the upper-end of the range of acceptability. As risks increase above this benchmark, they become presumptively less acceptable under section 112, and would be weighed with the other health risk measures and information in making an overall judgment on acceptability.”).

⁵² Benzene Rule, 54 Fed. Reg. 38,044, 38,062-63 (Sept. 14, 1989).

vegetation.”⁵³ To protect communities and the most-exposed individual from the highest risk allowed under the Refinery Standards, EPA must add multipathway and inhalation risk just as OEHHA does. As OEHHA has explained in its 2015 Risk Assessment Guidelines: “If multiple substances are emitted, the substance-specific cancer risks for all exposure pathways are summed to give the (total) multipathway cancer risk at the receptor location.”⁵⁴

EPA’s rationale also contravenes § 7412(f)(2) and is irrational because the record disproves EPA’s assumption. Refineries have a long history of upset and malfunction emissions, and have faced no consequence for those emissions and health impacts because of the general SSM exemption that EPA has now removed.⁵⁵ However, EPA’s new standards still allow uncontrolled spikes in emissions regularly (once or twice every three years) from PRDs and flares and anytime there is a force majeure event. That is why EPA assessed the “non-routine” risk from such incidents in the first place.⁵⁶ EPA must add the non-routine and routine inhalation cancer risk numbers it found together. That is the only way to account for the highest inhalation risk experienced by a person living near a refinery (or multiple nearby refineries).⁵⁷ People living near refineries are the same people most likely to experience emission spikes due to PRD releases and emergency flaring, and communities nationwide experience this far too often under the current rules.

EPA cannot ignore that there are people who both breathe in and ingest pollution from refineries at the highest assessed levels.⁵⁸ That is precisely why EPA recognized the need to assess both inhalation and multipathway risk here in the first place. Final RRA at 47-50. Evidence shows that people who live and breathe air near refineries have backyard, school, and

⁵³ NRC Science and Judgment in Risk Assessment (1994), <https://www.nap.edu/catalog/2125/science-and-judgment-in-risk-assessment>. EPA cited and relied upon this report in creating the Residual Risk Report to Congress in 1999. Residual Risk Report at 130-31, https://www.epa.gov/sites/production/files/2013-08/documents/risk_rep.pdf.

⁵⁴ Cal. EPA OEHHA 2015 Risk Assessment Guidance Manual at 8-12 (attached to 2014 Comments) (“Cancer risks from all carcinogens addressed in the HRA [health risk assessment] are added.”); (“Cancer risks from different substances are treated additively in risk assessment generally, and in the Hot Spots Program in part because many carcinogens act through the common mechanism of DNA damage.”).

⁵⁵ 2014 Comments at 26-27.

⁵⁶ Final RRA at 52.

⁵⁷ See, e.g., t.e.j.a.s. & UCS, *Double Jeopardy in Houston: Acute and Chronic Chemical Exposures Pose Disproportionate Risks for Marginalized Communities* (2016), <https://www.ucsusa.org/resources/double-jeopardy-houston>.

⁵⁸ EPA’s 1999 Residual Risk Report shows visually how inhalation and other pathways of exposure can cause cancer and other risk in the same community. EPA, Residual Risk Report to Congress at 36-37 & ex. 7 (1999), https://www.epa.gov/sites/production/files/2013-08/documents/risk_rep.pdf.

community gardens where they grow food that they eat.⁵⁹ Community urban gardens near refineries also feed local residents who visit local farmer’s markets and receive food assistance.⁶⁰

Refineries are located near small and large waterbodies, including the Great Lakes and the Houston Ship Channel, where community residents both breathe air and fish for sustenance because they need to, even where it is not safe to do so.⁶¹ Low-income, communities of color such as Asian and Pacific Islander communities in Los Angeles, and Native American and tribal community members in California and the Midwest, live and breathe air near refineries and also have higher rates of sustenance fish consumption.⁶² In view of the disproportionate exposure for people of color and the known impacts to these communities from refineries, it is particularly problematic and irrational for EPA to assume that the person most exposed to inhalation-based cancer risk is not also highly, and even the “most,” exposed to ingestion-based cancer risk.

Notably, EPA does not take any amount of ingestion risk and add that to the inhalation risk. Thus, even *assuming arguendo* that EPA could justify not adding the highest level of ingestion risk to the highest level of inhalation risk, it cannot lawfully or rationally avoid adding *at least some* amount of ingestion to the inhalation to attempt to better account for the real-world risk of the person most exposed to refinery pollution through multiple pathways.

Thus, EPA may not lawfully or rationally assume that “the most exposed individual” whom the Act directs the agency to protect is someone who *either* breathes air or ingests pollution, but never both. Instead, EPA must add the cancer risks it has found together to consider and regulate based on the maximum cancer risk to any person. Doing so will show that the cancer risk alone is above its own benchmark of acceptability, as high as 106-in-1 million even with substantial undercounting. Thus § 7412(f)(2) requires EPA to set stronger emission standards to reduce the emissions causing this risk. Finally, EPA must ensure the emission standards it promulgates do more than just the bare minimum to remove unacceptable risk. EPA must provide the “ample margin of safety to protect public health” that the Act requires.

⁵⁹ See, e.g., Map and List of Community Gardens near refineries in the Wilmington-Carson-Los Angeles area (provided by Coalition For A Safe Environment); Map and List of Community Gardens Near Refineries in the Houston Ship Channel communities (list from urbanharvest.org); Map and List of Community Gardens Near Refineries in Salt Lake City, UT (list from <https://www.slc.gov/sustainability/local-food/community-gardens/>).

⁶⁰ See, e.g., Urban Harvest, Farmers Markets, <https://www.urbanharvest.org/farmers-market/> (providing food grown locally by “providing an outlet for community and backyard gardeners to sell fresh produce harvested directly from their own soils”) to Houston community members); Salt Lake City Fruit Share, <https://www.slc.gov/sustainability/local-food/slc-fruitshare/> (connecting local backyard fruit growers with people who need produce locally); Shreveport, La. gardens near Calumet Refinery, http://rrccg.org/?page_id=34.

⁶¹ RRA App. 1 (Facility List) (showing refineries near waterbodies around the U.S., including in TX, WI, CA, LA); see, e.g., Fishing in the Houston Ship Channel, Port and Terminal (Nov. 6, 2019), <https://www.portandterminal.com/fishing-in-the-houston-ship-channel> (providing a photo of a man crabbing next to a fish advisory sign).

⁶² NEJAC, Fish Consumption and Environmental Justice at 14-15, 26-29 (Nov. 2002).

C. Objection: EPA’s Additional New Cancer Risk Rationale, That It Only Considers Risk Results To One Significant Digit, Also Fails to Support EPA’s Cancer Risk Assessment and Determination.

EPA’s other new rationale for attempting to find risks acceptable even though cancer risk is above 100-in-1 million is that: “Overall risk results are presented to one significant digit, thus, even if we were to add the non-inhalation risk of 4-in-1 million to the 100-in-1 million risk from inhalation, we would still assess the total risk based on allowable emissions as 100-in-1 million.” 85 Fed. Reg. at 6075. EPA is taking the startling position that, even though it has long recognized 100-in-1-million as the benchmark for unacceptable risk, it is actually unwilling to acknowledge that a risk is unacceptable unless it exceeds 110-in-1 million (or possibly even 150-in-1 million or 200-in-1-million, as, EPA does not even say what it means by claiming that it presents risk results to “one significant digit,” let alone explain what this new rationale means).

What is clear is that EPA is contending that certain risks above 100-in-1 million—and possibly risks far higher than 100-in-1 million—are now presumptively “acceptable” because of a “one significant digit” rationale that EPA has not before presented. EPA appears to have suddenly added 10%, or even more, to the amount of cancer risk it is now deeming presumptively allowable. This new position is flatly inconsistent with Circuit precedent, Congress’s decision to adopt that precedent into the Clean Air Act when it enacted the 1990 Amendments, and EPA’s own longstanding practice. *NRDC v. EPA*, 529 F.3d 1077, 1082 (D.C. Cir. 2008); 79 Fed. Reg. at 36,899 (“an MIR [maximum individual lifetime cancer risk] of approximately one in 10 thousand [i.e., 100-in-1 million] should ordinarily *be the upper end of the range* of acceptability.”). Also, because EPA’s departure from precedent is wholly unexplained, it is unreasonable and arbitrary.⁶³

EPA has long recognized that 100-in-1 million is the benchmark limiting presumptive acceptability. 80 Fed. Reg. at 75,188 (citing Benzene Rule; *NRDC v. EPA* (D.C. Cir. 2008); 85 Fed. Reg. 6075.⁶⁴ Commenters have repeatedly called for EPA to reduce this benchmark because it is too high and is outdated in view of many changed circumstances since EPA chose that number in 1989 – and in view of the D.C. Circuit’s direction that EPA must follow the statutory direction to get cancer risk down to 1-in-1 million to be an “aspirational goal.” *NRDC v. EPA*, 529 F.3d at 1082. Thus, for EPA now to contend that it can ignore any cancer risk above 100-in-1 million, rather than recognize cancer risk above this benchmark cannot be presumed to

⁶³ See, e.g., *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (requiring “more detailed explanation” for changes in fact finding; *Motor Vehicle Mfrs. Ass’n v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 42 (1983) (“the requirement that an agency provide reasoned explanation for its action would ordinarily demand that it display awareness that it is changing position. An agency may not, for example, depart from a prior policy sub silentio or simply disregard rules that are still on the books.”); see also *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125-26 (2016) (discussing the need to explain changes in agency policy based on actual facts and circumstances).

⁶⁴ 2015 RTC at 70 (-0802) (“The approximately 100-in-1 million benchmark was established in the Benzene NESHAP (54 FR 38044, September 14, 1989), which Congress specifically referenced in CAA section 112(f)(2)(B)”); 79 Fed. Reg. at 36,899 (“the level of the [maximum individual lifetime cancer risk] is only one factor to be weighed in determining acceptability of risks ... the Agency may find, in a particular case, *that a risk that includes MIR less than the presumptively acceptable level is unacceptable* in the light of other health risk factors.”) (quoting Benzene Rule) (emphasis added).

be acceptable, is a stark and unacknowledged departure from its policy and longstanding practice. It is therefore arbitrary and capricious under *State Farm*. EPA chose the arbitrary number of 100-in-1 million (and should reduce it as Petitioners contended in 2014 Comments at 90-94). For EPA to now add at least another 10% to that risk and say it will ignore that additional amount of cancer risk is even more arbitrary. Either EPA has a presumptive benchmark it uses or it does not. The agency chose to create this, Congress and D.C. Circuit have recognized this as a benchmark, *NRDC v. EPA*, 529 F.3d at 1082 (citing 1990 Amendments), and EPA cannot now sideline it when using it would inconveniently show that the agency must strengthen emission standards.

It also violates the Act's direction for EPA perform the § 7412(f)(2) rulemaking where cancer risk is above "1-in-1 million," and to provide an "ample margin of safety to protect public health." 42 U.S.C. § 7412(f)(2). EPA has long recognized that this provision requires the agency "to protect the greatest number of persons possible to an individual lifetime risk level of no higher than approximately 1-in-1 million." 85 Fed. Reg. at 6075 (citing Benzene Rule, 54 Fed. Reg. 38,044-45 (Sept. 14, 1989)). In enacting this provision, Congress chose the precise increment that Congress considered relevant and that is "1-in-million," not ten-in-one million or any higher factor using "one significant digit." Thus EPA's contention that it can ignore any 1-in-1 million increments of cancer risk, including the additional at least 6-in-1 million risk that it is trying to avoid adding to the inhalation risk here, violates the statute's clear text directing EPA to focus on each additional "one-in-one million" increment of cancer risk as relevant and significant. 42 U.S.C. § 7412(f)(2).

It is also important that there is no *de minimis* exposure to carcinogens. Rather, scientific consensus directs that carcinogens have no safe level of exposure. Congress and the D.C. Circuit have recognized this for decades.⁶⁵ Every additional amount of exposure to a carcinogenic HAP increases a person's likelihood of getting cancer during their lifetime. And exposure to even low levels of carcinogens is particularly dangerous for children and to the fetus *in utero*, due to increased susceptibility and exposure during these developmental stages,⁶⁶ as OEHHA has recognized by applying a factor to account for this additional vulnerability.⁶⁷ In 2019, EPA scientists, in their own work with outside scientist co-authors, released a new study that analyzed and validated the use of such a factor, finding that transplacental exposure to toxic chemicals increases lifetime health risks.⁶⁸

Therefore, it runs directly counter to the objective of § 7412(f)(2) to ignore any amount of carcinogenic pollution by rounding down—or to consider any amount of carcinogenic

⁶⁵ S. Rep. 101-228, at 175, 1990 U.S.C.C.A.N. at 3560 ("Federal Government health policy since the mid-1950s has been premised on the principle that there is no safe level of exposure to a carcinogen"); *NRDC v. EPA*, 824 F.2d 1146, 1147 (D.C. Cir. 1987) (*en banc*) ("Current scientific knowledge does not permit a finding that there is a completely safe level of human exposure to carcinogenic agents.").

⁶⁶ 2014 Comments at 71-72 ("The NAS identified the lack of accounting for "in utero periods" of exposure as a major omission by EPA).

⁶⁷ *Id.* (citing OEHHA guidelines).

⁶⁸ Dzubow, R. et al., Comparison of carcinogenic potency across life stages: implications for the assessment of transplacental cancer risk, *J. Toxicol. Environ. Health A.*; 82(13):769-787. doi: 10.1080/15287394.2019.1650860. Epub 2019 Aug 11.

pollution to be in essence *de minimis*. Even assuming there could be any amount of carcinogenic pollution that EPA could ignore as not significant, however, it could not treat one-in-one million cancer risk to be *de minimis* when the statute uses that as a defining term. 42 U.S.C § 7412(f)(2). And it is especially important for EPA not to ignore this cancer risk when it is occurring *on top of* routine cancer risk from inhalation that is already so high: 100-in-1 million. The aggregate cancer risk here is dangerous to public health and EPA must recognize that it is “unacceptable” for refineries to cause this much health risk, and must set standards pursuant to § 7412(f)(2) to protect public health as the Act directs. For communities with other types of toxic air pollution sources as well, like Houston, where communities face even higher cumulative risks from multiple sources, for EPA to ignore any amount of additional cancer risk is even more unconscionable.⁶⁹

EPA’s new statement is also vague, conclusory and unsupported. EPA does not explain what it means by “one significant digit,” nor does the agency give any reason for using this restriction. EPA does not make clear whether it means that, if the additional risk tipped the total to 110-in-1 million, it would consider it, or if the additional cancer risk would have to increase the total to 160-in-1 million, or as high as 200-in-1 million for this to matter to EPA. EPA regularly considers health risks ranging from 10-in-1 million to 100-in-1 million, so it cannot be suggesting that it would ignore risk all the way up to 150-in-1 million, or even 200-in-1 million.⁷⁰ However, EPA’s statement is also confusing because where EPA performs a cancer risk assessment and finds cancer risk to be between 1-in-1 million and 10-in-1 million, EPA regularly has “presented” the cancer risk number in between those values, rather than rounding down to 1-in-1 million, based on its suggestion here that it can ignore the excess risk because it does not change the “significant digit.”⁷¹ EPA has not in those rules refused to present the cancer risk or suggested that it is equivalent to 1-in-1 million. Notably, EPA also has even presented and considered risks with at least *two* significant digits, such as “110-in-1 million,” “150-in-1 million” and “270-in-1 million,” contrary to its rationale here.⁷² EPA’s new rationale

⁶⁹ t.e.j.a.s. & UCS, *Double Jeopardy in Houston: Acute and Chronic Chemical Exposures Pose Disproportionate Risks for Marginalized Communities* (2016), <https://www.ucsusa.org/resources/double-jeopardy-houston>.

⁷⁰ See, e.g., Iron & Steel NESHAP Proposed Rule, 84 Fed. Reg. 42,704, 42,720 (Aug. 15, 2019) (identifying cancer risk ranging from 2 to 20 to 30 to 50-in-1 million); Plywood NESHAP Proposed Rule, 84 Fed. Reg., 47,074, 47,088 (Sept. 6, 2019) (identifying cancer risk of 30-in-1 million).

⁷¹ See, e.g., National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units—Reconsideration of Supplemental Finding and Residual Risk and Technology Review, Proposed Rule, 84 Fed. Reg. 2670, 2697 (Feb. 7, 2019) (presenting cancer risk of 9-in-1 million based on so-called “actual” emissions, and 10-in-1 million based on MACT-allowable emissions); Off-Site Waste Recovery NESHAP, Final Rule, 80 Fed. Reg. 14,248, 14,253 (Mar. 18, 2015) (presenting cancer risk of 9-in-1 million based on so-called “actual” emissions and 20-in-1 million based MACT-allowable emissions).

⁷² See, e.g., EPA Proposed Rule, National Perchloroethylene Air Emission Standards for Dry Cleaning Facilities, 70 Fed. Reg. 75,884, 75,892, 75,895 (Dec. 21, 2005) (assessing and presenting cancer risks of 150-in-1 million, 270-in-1 million, and 2,400-in-1 million for certain (major) sources and cancer risks of 110-in-1 million, 175-in-1 million and 220-in-1 million for certain (area) sources)) (final rule challenged and EPA sought and obtained a voluntary remand, D.C. Cir. No. 06-1330 (Remand Order) (D.C. Cir. Apr. 29, 2009)).

thus not only violates the Act, it is out of step with its own prior policy and practice, and is unmoored from rationality.

EPA may not lawfully or rationally ignore the excess cancer risk from inhalation of pollution released during the emission spikes EPA allows as part of its malfunction exemptions, nor the excess cancer risk EPA has found from ingestion. EPA must admit that its own record shows the cancer risk is above 100-in-1 million. EPA must grant reconsideration to set standards to reduce this and the other health threats refineries cause (including acute risks from benzene and other chronic risks, as discussed below and in Petitioners' earlier comments). EPA cannot satisfy § 7412(f)(2) by ignoring cancer, or any other kind of risk.

Furthermore, EPA's cancer risk assessment, including its multipathway risk assessment, represent a significant undercount of the true cancer risks communities are facing. 2014 Comments at 32-90; 2016 Comments at 72. For example, EPA failed to quantify the risk from dermal exposure, from exposure *in utero*, of infants in breastmilk, or of children playing at home or on a playground near a refinery and ingesting soil or dust containing the pollution—though it cannot deny that these exposures happen regularly near refineries around the United States and the best available science demonstrates that they contribute to cancer risk.⁷³ Since the comment period closed, another new study has come out, the authors of which include some current and former EPA scientists, recognizing that EPA must apply an age-dependent adjustment factor to account for *in utero* exposure and cancer risk that starts during fetal development.⁷⁴

EPA also acknowledged but did not quantify the additional cancer risk from ingestion of fish in the Great Lakes (in close proximity to refineries like Husky, Marathon and others), and other large waterbodies, because it has not yet created parameters to put numbers on this additional risk. Final RRA App. 4 at 8. EPA cannot deny that risk from dispersion into those waterbodies and ingestion of fish from those waters exists and that it has ignored this risk. It is indisputable that EPA's own multipathway assessment therefore undercounts the risk from fish ingestion. EPA also failed to acknowledge increased exposure for low-income or and tribal or Native American communities who are more exposed to PBTs and the resulting cancer risk they cause due to increased consumption through fishing, hunting, and farming.⁷⁵ EPA did not account at all for this increased exposure for any community members in the Risk Assessment and just used the same default value for all. The National Environmental Justice Advisory Council (NEJAC) has called EPA's use of default values that "are less protective of higher-consuming and subsistence subpopulations ... [g]iven that these subpopulations are in the main comprised of particular communities of color, low-income communities, tribes, or other indigenous peoples, ... deeply troubling." NEJAC 2002 at iv. EPA also has left known toxic metals that persist in the environment, like arsenic, out of the multipathway risk assessment completely, even though it has fully parameterized its multipathway approach to account for risk

⁷³ 2014 Comments at 82 (citing OEHHA Risk Assessment Guidance Manual).

⁷⁴ Dzubow, R. et al., Comparison of carcinogenic potency across life stages: implications for the assessment of transplacental cancer risk, *J. Toxicol. Environ. Health A.*; 82(13):769-787. doi: 10.1080/15287394.2019.1650860. Epub 2019 Aug 11.

⁷⁵ NEJAC at iv ("many American Indian and Alaska Native (AI/AN) communities are particularly prone to environmental harm due to their dependence on subsistence fishing, hunting, and gathering").

from arsenic since completing the 2015 RRA, and could and should do so for other metals, such as chromium.⁷⁶ Thus, although metals like arsenic are known to contribute to cancer risk from ingestion, EPA’s assessment assumes they are zero.

D. These Objections to EPA’s New Rationales on Cancer Risk Are Of Central Relevance Because They Are A Core Basis for EPA’s Decision Not To Set Stronger Standards Pursuant to § 7412(f)(2).

Because these objections go directly to EPA’s rationale for refusing to find cancer risk to be unacceptable, and consequently, not setting stronger emission standards pursuant to § 7412(f)(2), the objections are of “central relevance” to the outcome of the rule. 42 U.S.C. § 7607(d)(7)(B). The risk assessment is the core determination under this provision at step one of the regulatory stage. If EPA finds risk unacceptable, it must reduce risk to acceptable levels without consideration of cost. Then, it must provide an “ample margin of safety to protect public health.” 42 U.S.C. § 7412(f)(2). The objections are also “of central relevance” because of the high cancer risk communities are facing, and because EPA has undercounted this risk (as summarized above). If EPA were to add together the cancer risks it has found—which already undercount the real-world health risks—it would find the cancer risk alone is above the benchmark of what EPA has recognized to be presumptively unacceptable. Consequently, EPA would be required to act pursuant to § 7412(f)(2) to set stronger standards to eliminate this unacceptable cancer risk and provide an “ample margin of safety to protect public health” from refineries’ pollution. Therefore, EPA must grant reconsideration.

V. EPA MUST GRANT RECONSIDERATION ON THE NEW ANALYSIS AND NEW RATIONALE IT HAS USED TO ASSESS ACUTE RISK, AND TO GROUND ITS § 7412(F)(2) DETERMINATION.

A. Inability to Raise the Objection in Comments.

Benzene is a dangerous pollutant that is a neurotoxicant and can cause acute respiratory harm as well as cancer. 2014 Comments at 13. Refineries emit approximately 1,174 tons per year of benzene, according to EPA. In 2015, EPA set fenceline monitoring requirements for benzene because it is a highly hazardous air pollutant that all refineries emit, and that EPA believes is present in all or most fugitive emissions. 2015 RTC at 209 (-0802) (“The work practice standard is tailored to detect and correct fugitive emissions using benzene as a surrogate for organic HAP in refinery process streams.”).

In the proposed and final 2015 Rule, EPA assessed acute risk from benzene using an acute reference exposure level of 1.3 ug/m³. Final RRA at 31 (appearing to refer to the pre-2014 Cal. EPA OEHHA “REL” of 1.3 mg/m³), EPA-HQ-OAR-2010-0682-0800. Petitioners called

⁷⁶ See, e.g., EPA, Residual Risk Assessment for the Integrated Iron and Steel Manufacturing Source Category 16, 44 (May 2019), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2002-0083-0961> (assessing “arsenic” in multipathway analysis for “human health risks due to non-inhalation exposure” using TRIM.FaTE model); see also EPA, FERA Recent Additions, <https://www.epa.gov/fera/fera-recent-additions> (adding arsenic to the TRIM.FaTE model on Dec. 22, 2016).

for EPA to use the most current, then-recently finalized 2014 Cal. EPA OEHHA reference exposure level for benzene of 27 $\mu\text{g}/\text{m}^3$ (or 0.027 mg/m^3). Applying that REL would have shown acute risk to be an order of magnitude greater, from just this one pollutant. EPA did not do so, but in the 2015 record stated that it was considering the new OEHHA benzene value.⁷⁷ Even so, in 2015, using the prior REL, EPA still found very high acute risk, a hazard quotient of 14, from benzene alone, due to non-routine or malfunction emissions allowed pursuant to the PRD and flare exemptions. Final RRA at 52 (-0800); 80 Fed. Reg. at 75,187.

EPA's own scientific guidelines, as affirmed by the Science Advisory Board, direct EPA generally to apply the agency's own IRIS toxicology values, then ATSDR, and then California EPA OEHHA values as the priority health reference or dose-response values.⁷⁸ As EPA explained in the proposed and final Residual Risk Assessment, "The prioritization process was aimed at incorporating into our assessments the best available science with respect to dose-response information." Final RRA at 15-16.⁷⁹ EPA has prioritized use of the Cal. EPA OEHHA values, as the only dose-response values EPA applies from any state. This is because, as EPA has explained: "The process for developing these assessments is similar to that used by EPA to develop IRIS values and incorporates significant external scientific peer review." *Id.* at 16. It appears that in 2015, EPA had simply not updated the REL yet to recognize the change in 2014, as it should have to follow these guidelines, but at least it was applying the prior OEHHA REL.

In the Final 2020 Rule, however, without public notice-and-comment, EPA completely changed the risk factor and risk calculation that it used to assess acute risk to take an approach that is not supported by the best available science or the SAB and was the opposite of what Petitioners called for. EPA states that in May 2018, "EPA toxicologists decided it is not appropriate to use the benzene REL value to support EPA's RTR rules," and that EPA would instead use a *weaker* value derived for Emergency Response Planning Guidelines, the ERPG-1. 85 Fed. Reg. at 6076.⁸⁰ As a result, EPA now suddenly finds that the additional acute risk from the malfunction emissions is no longer an HQ of 14. Instead, EPA states that the acute value from non-routine emissions is 0.07, applying the ERPG-1 factor. *Id.*

⁷⁷ Response to Comments for the 2015 Rule at 26 (-0802) ("The EPA scientists reviewed the information provided by the commenter regarding the California values and concluded that further information is needed to evaluate the scientific basis and rationale for the recent changes in California OEHHA risk assessment methods. The EPA will work on gathering the necessary information to conduct an evaluation of the scientific merit and the appropriateness of the use of California OEHHA's new toxicity values in the agency decisions. Until the EPA has completed its evaluation, it is premature to determine what role these values might play in the RTR process. Therefore, EPA did not use the new California OEHHA toxicity values as part of this current rulemaking.").

⁷⁸ Sci. Adv. Board, Review of EPA's draft entitled, "Risk and Technology Review (RTR) Risk Assessment Methodologies: For Review by the EPA's Science Advisory Board with Case Studies – MACT I Petroleum Refining Sources and Portland Cement Manufacturing," EPA-SAB-10-007 at ii, 5-6 (May 7, 2010) (attached) ("SAB May 2010") ("The Panel found EPA's approach to selecting dose-response chronic toxicity values to be generally sound.").

⁷⁹ EPA further explains that it has prioritized use of the Cal. EPA reference dose values because of "(1) conceptual consistency with EPA risk assessment guidelines and (2) level of peer review received." RRA at 15-16.

⁸⁰ EPA does not provide this factor anywhere in the 2020 Final Rule, but Petitioners believe it is the same as it was in 2014-15 when EPA *rejected* use of the ERPG-1: 160 mg/m^3 .

EPA did not provide this rationale or calculation, and did not cite or provide the “May 2018” document from “EPA toxicologists” on which the 2020 Final Rule relies in the docket during the comment period, or even now with the Final Rule. It could not have done so when taking comment on Petitioners’ reconsideration petition, because the document and rationale were not even created in 2016. EPA also did not provide notice that it would apply the ERPG-1 to assess risk, and reach a different acute risk HQ than using the REL. Therefore, it was “impracticable” to object to use of the 2018 document and ERPG-1 as a reason to weaken the Residual Risk Assessment for refineries and to refuse to set § 7412(f)(2) standards. Further, the grounds for the below-discussed objections arose after the close of the comment period under § 307(d)(7)(B), when EPA unveiled its new rationale with the 2020 Final Rule.

B. Objection: EPA Unlawfully and Arbitrarily Changed the Dose-Response Value Used to Assess Acute Health Risk from Benzene and This Led to an Unlawful and Arbitrary Risk Assessment and § 7412(f)(2) Determination.

In the 2020 Rule, EPA’s new rationale for finding low acute risk and determining that health risks are acceptable is that it has used a different factor to assess acute risk than it did in the 2015 Rule: the ERPG-1. EPA states that it has done this in reliance on a May 2018 decision by unknown “toxicologists.” Not only is the May 2018 document EPA cites not in the rulemaking docket, there also does not appear to be any such document available on EPA’s website. The only information Petitioners could find on EPA’s website is the Dose-Response Table EPA uses for these rules which *includes the 2014 OEHHA REL value for benzene: 0.027 mg/m³*.⁸¹ There is no indication in that Table that EPA does not believe that value reflects the best available science or that EPA will not use that in risk assessments.

EPA gives basically no explanation or information on what the May 2018 document says. EPA states only that “considering aspects of the methodology used in the derivation of the value and how this assessment stands in comparison to the Agency for Toxic Substances and Disease Registry’s toxicological assessment,” EPA will use the ERPG-1 instead of the REL. 85 Fed. Reg. at 6076. This is a conclusory statement that does not provide support for EPA’s new risk assessment, and the risk determination based on that factor. There is no description or explanation of what “aspects of the methodology” a toxicologist questioned, or why. There is no description of the alleged “comparison” to the ATSDR value, nor any explanation of why that would lead EPA not to use *either* the REL *or* the ATSDR value (if it considers that more authoritative). EPA has given no rational basis to question the REL or refuse to use it here. It has provided no scientific information or any evidence at all for ignoring the more protective value created by OEHHA scientists using a thorough review of all scientific evidence, and peer-review process.⁸²

The statement also makes no sense. The 2007 ATSDR toxicological profile for benzene discusses acute risk and describes a “minimal risk level” of 0.009 ppm which translates to 0.028 mg/m³.⁸³ That is quite close to the OEHHA value. If anything, the ATSDR *supports* rather than

⁸¹ <https://www.epa.gov/sites/production/files/2014-05/documents/table2.pdf> (attached).

⁸² Cal. EPA OEHHA 2014 REL for Benzene (docketed with Petitioners’ 2014 Comments), *available at* <https://oehha.ca.gov/media/downloads/crn/appendixd1final.pdf>.

⁸³ ATSDR, Benzene Toxicological Profile at 21, <https://www.atsdr.cdc.gov/ToxProfiles/tp3.pdf>.

undermines the REL in any way. If it undermines the OEHHA value, EPA has not shown how. If EPA deems the ATSDR value to be more protective or more accurate, EPA also fails to explain why that is—and if so, why EPA is not using that instead of the ERPG-1 value which is far weaker, and not an appropriate factor for risk assessment from regulation of routine air pollution.

The 2014 OEHHA REL is well-supported and reflects the best available science.⁸⁴ It is the peer-reviewed factor that meets EPA’s own scientific integrity principles, and that is why EPA’s own Risk Assessment prioritizes use of the OEHHA values. Final RRA at 15-16.

Yet, for benzene, EPA uses a value that is two orders of magnitude less protective than the REL that EPA has previously used (1.3), and that is five orders of magnitude less protective than the current REL. Further illustrating how extremely problematic this is, the Occupational Safety and Health Administration’s permissive exposure level for workers is lower than the value EPA used here. OSHA’s 8-hour PEL is 1 ppm, and its acute or short-term PEL is 5 ppm as averaged over any 15 minute period.⁸⁵ Thus, the value EPA is using to consider how much protection it will consider for community residents—who, unlike workers, have no protective equipment or other occupational safeguards, who live near the facility (and do not just work for part of the day), and who may well be more vulnerable to the health risks of pollution than the average worker—is *30 times less protective than the value OSHA uses* to address health and safety threats for workers.

The evidence shows EPA’s proposal significantly undercounts the acute health hazards of the regulated facilities’ emissions. It is both unlawful and arbitrary, as it is out of step with EPA’s longstanding practice, an unsupported change with that practice, and a failure to apply the best available science. In addition to underestimating acute non-cancer health hazards, EPA is willingly and knowingly exposing communities of color and low-income communities to increased and unnecessary harm from short-term benzene exposure.

By contrast with the REL, the emergency-focused value, ERPG-1, is not an appropriate value to assess human health risk from regular and repeat exposure over time to refinery emissions under § 7412(f)(2). This value was created by a non-governmental entity, the American Industrial Hygiene Association (AIHA), for use in responding to chemical hazard incidents like massive leaks, fires, and malfunctions, not to assess and decide how much air pollution to allow communities to breathe regularly.⁸⁶ EPA has described the ERPG-1 not as a threshold where *no* acute harm occurs but rather: “ERPG 1 is the maximum airborne concentration below which it is believed nearly all individuals could be exposed *up to one hour*

⁸⁴ See OEHHA REL for Benzene, *supra* note 82.

⁸⁵ 29 C.F.R. § 1910.1028(c)(1)-(2),

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=10042&p_table=STANDARDS.

⁸⁶ CDC NIOSH, Benzene, https://www.cdc.gov/niosh/ershdb/emergencyresponsecard_29750032.html; EPA.

without experiencing *other than mild transient adverse health effects or perceiving a clearly defined objectionable odor.*⁸⁷

EPA has admitted that the Emergency Response Planning Guidelines (ERPG) values were created for emergency exposure scenarios. Levels defined for “once-in-a-lifetime, short-term exposures” and “emergency planning” for “single exposures” to chemical releases or accidents are not appropriate tools to use to measure the acceptability of acute risks over a lifetime from one or more potential exposures due to an industrial source’s emissions.⁸⁸ The ERPG-1 is designed solely for emergency exposure response (such as when to send first responders into a scene with an active chemical hazard and when that is too dangerous), and cannot be considered health-protective for community members facing potentially repeat exposures over a lifetime to acute risks from emission spikes. An emergency value like this cannot provide assurance for or in any way justify EPA’s acceptability determination. EPA may not use these values in lieu of health-protective reference values such as the REL, and has no rational or scientific basis to assume that risks below these levels are safe.⁸⁹

EPA distorts the SAB’s recommendations in the 2020 Final Rule preamble. EPA states that “in response to a key recommendation from the Science Advisory Board’s peer review of the EPA’s RTR risk assessment methodologies, we now examine a wider range of available acute health metrics than we do for our chronic risk assessments.” 85 Fed. Reg. at 6076. That citation is deceptive, however.

The SAB has approved use of the RELs but *not* the ERPGs without reduction “by a factor of 3.” As the SAB has explained:

The incorporation of the available California Reference Exposure Levels (RELs) for the assessment of acute effects is a conservative and *acceptable approach* to characterize acute risks The Panel *has some concern with the use of* the Acute Exposure Guidelines Limits (AEGs) and *Emergency Response Planning Guidelines (ERPGs)* These limits were developed for accidental release emergency planning and are not appropriate for residual risk assessments without modification because, as described in the AEGL and ERPG documentation, adverse effects may occur at these levels. Some of the AEGLs and ERPGs listed in Table 2-5 are higher than values used to protect healthy workers from acute effects in occupational settings. The Panel recommends considering reducing

⁸⁷ EPA Benzene Hazard Summary, <https://www.epa.gov/sites/production/files/2016-09/documents/benzene.pdf>.

⁸⁸ 79 Fed. Reg. at 36,890-91.

⁸⁹ See, e.g., SAB May 2010 at 6 (*available at* [https://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/\\$File/EPA-SAB-10-007-unsigned.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/EPA-SAB-10-007-unsigned.pdf)), attached to 2014 Comments.

the AEGL1/EPRG-1 emergency guideline values by a factor of 3, when the value is based on a LOAEL rather than a NOAEL.⁹⁰

Thus, the SAB has acknowledged, using the ERPG-1 would be expected to underestimate risk to the maximum exposed individual. These values are therefore not appropriate to rely on to attempt to protect health from unacceptable hazardous exposure in a § 7412(f)(2) residual risk analysis.

Further, the D.C. Circuit recently held in reviewing an EPA risk assessment pursuant to § 7412(d)(4) that EPA had not sufficiently justified refusing to use the most up-to-date Cal. EPA OEHHA reference values.⁹¹ In this instance, EPA's refusal to use the most up-to-date 2014 REL for benzene is just as arbitrary and capricious as the court found in that case.

In view of EPA's own scientific guidelines and practice to use the REL, EPA's sudden change without taking public notice-and-comment on the use of and calculation of acute risk based on the ERPG-1 instead of the REL, and without providing a detailed explanation for changing the risk factor it uses to reach the acceptability finding is arbitrary. *See, e.g., FCC v. Fox*, 556 U.S. at 515. It is also unlawful because EPA has recognized the need to apply the "best available science" under § 7412(f)(2).

In addition and independently, EPA did not provide public notice of, and does not cite or place the May 2018 document or any evidence on which it relies into the docket to find lower acute risk from benzene. Yet EPA relies on this to refuse to find risk unacceptable and strengthen the emission standards. Therefore, EPA has violated both notice-and-comment requirements and the procedural rulemaking requirement to include such material with the final rule to allow for effective judicial review. 42 U.S.C. § 7607(d)(3)-(d)(6), 7607(B), 7607(h).

C. This Objection to EPA's Change in the Use of the Acute Risk Value for Benzene Is Of Central Relevance Because This Is A Basis for EPA's Decision Not To Set Stronger Standards Pursuant to § 7412(f)(2).

This objection is "of central relevance" to the rule because EPA has relied in part on the allegedly, newly low acute risk (now below the HQ of 1) to attempt to justify its finding that health risks from refineries are "acceptable" under § 7412(f)(2). 85 Fed. Reg. at 6074, 6076. That is the core determination under this provision at step one of the regulatory stage. If EPA finds risk unacceptable, it must reduce risk to acceptable levels without consideration of cost. Then, it must provide an "ample margin of safety to protect public health." 42 U.S.C. § 7412(f)(2). EPA's use of the ERPG-1 and new finding of lower acute health risk based on that factor is of "central relevance" to the outcome of the final rule: EPA's determination not to set

⁹⁰ SAB May 2010 at 6 (emphasis added), attached to 2014 Comments.

⁹¹ *See, e.g., Sierra Club v. EPA*, 895 F.3d at 11-12.

stronger standards pursuant to § 7412(f)(2) to reduce benzene and other emissions from refineries.

Consequently, community residents, including Petitioners' members, must face higher benzene emissions, and co-emitted hazardous air pollutants, than they would if EPA were to recognize the need to reduce the benzene emissions. This issue is particularly important in view of the new EIP report showing higher than anticipated levels of benzene at the fenceline, with some refineries even exceeding the action concentration level for benzene during 2019.⁹² This report demonstrates that it is likely that EPA undercounted the benzene emissions in its 2015 Residual Risk Assessment, making EPA's decision to use an emergency response value instead of a health-protective REL to assess risk even more problematic. Therefore, EPA must convene proceedings to reconsider the finding on acute risk from benzene from non-routine emissions, and the finding of acceptable risk and regulatory determination based in part on that finding.

CONCLUSION

For the reasons this petition provides, EPA must convene a reconsideration proceeding for the 2020 Refinery Rule. EPA must strengthen the Refinery Standards to satisfy the Act's requirements in § 7412(d) and (f)(2), as cited above, to ensure that communities exposed to refineries' toxic air pollution finally receive the emission limits and resulting health and environmental protections that all Americans deserve and to which people near these facilities are legally entitled. We appreciate your thoughtful evaluation of the important issues in this petition and urge you to act to fulfill your responsibility to protect public health. Please contact Petitioners if you would like additional information regarding this petition.

Sincerely,

/s/ Emma C. Cheuse

Emma Cheuse

James S. Pew

echeuse@earthjustice.org

jpew@earthjustice.org

(202) 667-4500 ext. 5220 or 5214

1001 G. Street, NW, Suite 1000

Washington, DC 20001

*Counsel for Petitioners Air Alliance
Houston, California Communities
Against Toxics, Clean Air Council,
Coalition For A Safe Environment,
Community In-Power &
Development Association, Del Amo
Action Committee, Environmental
Integrity Project, Louisiana Bucket
Brigade, Sierra Club, Texas*

⁹² EIP 2020 Report, *supra*, note 25; EIP 2020 Addendum (attached).

*Environmental Justice Advocacy
Services, and Utah Physicians For A
Healthy Environment*

Cc:
Associate General Counsel for the
Air & Radiation Law Office
Office of General Counsel
Mail Code 2344A
U.S. EPA
1200 Pennsylvania Ave., NW.
Washington, D.C. 20460

Ms. Brenda Shine, OAQPS
shine.brenda@epa.gov

Ms. Maria Malave, OECA
Malave.maria@Epa.gov

Enc: Attachment A (below)
Documents cited as Appendix

Attachment A to Petitioners' Petition for Reconsideration of 2020 Final Rule

Through review of records from BAAQMD and SCAQMD and available on the websites of state environmental agencies in Louisiana, Texas and Indiana, Petitioners have obtained some semi-annual NESHAP Subpart CC compliance reports that are available from the first half of 2019 (and two reports for the second half of 2019) for 14 refineries that have PRDs that release to the atmosphere.⁹³

We calculated that the reports for these 14 refineries collectively represent compliance data for approximately 998 uncontrolled PRDs, based on: (1) the specific number of uncontrolled PRDs for eight of these 14 refineries, determined through Subpart CC notifications submitted by these 8 refineries;⁹⁴ and (2) for the remaining 6 of these 14 refineries, the average number of uncontrolled PRDs per refinery nationwide, as determined through EPA data.⁹⁵ **Yet among those approximately 998 uncontrolled PRDs, there was only one small, three-minute PRD release to the atmosphere, as noted in the below Table A, summarizing the compliance data that we pulled for these 14 refineries.**

Although these compliance reports (for the most part) cover just one semi-annual reporting period,⁹⁶ if uncontrolled PRDs continued to vent to the atmosphere at the same rate over the course of six semi-annual reporting periods as they did in our analysis, these approximately 998 uncontrolled PRDs would experience only six (or less) *total* atmospheric releases over those three years, a rate of 0.006 during that timeframe. Or to be more conservative (since some of the refineries we looked at may have only been reporting PRD compliance data for five months, given the January 30, 2019 compliance deadline), atmospheric releases at the same rate over 7.2 reporting periods (five months multiplied by 7.2 would yield three years of

⁹³ The deadline for refineries to comply with the work practice requirements for uncontrolled PRDs was January 30, 2019. 40 C.F.R. § 63.648(j)(3).

⁹⁴ These eight refineries collectively specified that they have 380 PRDs capable of releasing to the atmosphere. More specifically, the semi-annual Subpart CC compliance report for the Valero Houston refinery (at PDF pp. 5-6) notes a total of two PRDs in HAP service. And the Subpart CC notifications of compliance status for the following refineries noted the following number of PRDs that are capable of releasing to the atmosphere: 34 PRDs at BP Whiting (see Table 3); 188 PRDs at Exxon Baton Rouge (see Appendix B); 3 PRDs at Marathon Garyville (see p. 3); 13 PRDs at Phillips 66 Lake Charles (see PDF pp. 15-16); 57 PRDs at Shell Deer Park (see p. 4); 52 PRDs at Tesoro Martinez (see pp. 1-3); and 31 PRDs at Valero Benicia (see pp. 2-4).

⁹⁵ The average refinery nationwide has approximately 103 uncontrolled PRDs. EPA found that there are 15,100 atmospheric PRDs at U.S. petroleum refineries. Pressure Relief Device Control Option Impacts for Final Refinery Sector Rule Memo at 5 (July 30, 2015), EPA-HQ-OAR-2010-0682-0750. With 147 U.S. refineries, that means that the average refinery has 102.7 PRDs. *See also* Reconsideration Comments filed by Sierra Club *et al.* at 19 n. 44, 47 (finding approximately 13,561 uncontrolled PRDs across the country –with an average of 93 per refinery), attached and incorporated by reference. Thus, using the average of 103 atmospheric PRDs per refinery, we calculated that the remaining six of the 14 refineries cited in the table below collectively have 618 PRDs capable of releasing to the atmosphere.

⁹⁶ As alluded to above and detailed in the below table, we were able to obtain reports for two refineries covering both the first and second half of 2019.

data) would yield only 7.2 (or fewer)⁹⁷ releases among the 998 PRDs—or an average of 0.007 (or less) releases per uncontrolled PRD over three years. EPA, on the other hand, allows that each PRD at refineries would have one or two uncontrolled atmospheric releases over the course of three years—a number of releases that is exponentially higher than what has been demonstrated by real-world results from refineries from the available 2019 reports.

Petitioners were not able to search out the best performing uncontrolled PRDs; instead, we obtained those compliance reports that happened to be available online—or happened to be produced by state/local environmental agencies—for some refineries.⁹⁸ Given that the data readily available shows that the average uncontrolled PRD at the average refinery would have very close to zero releases (0.007, or less) over three years, this data covering many PRDs across these 14 refineries very strongly suggests that the average PRD from the best performers has zero releases to the atmosphere over three years, the time period set by EPA’s 2015 Rule and affirmed by EPA’s 2020 Final Rule. Table A below summarizes the data Petitioners obtained.

⁹⁷ Because two of the refineries reported no releases during the first or second half of 2019, the rate would actually be less than 7.2 releases over three years.

⁹⁸ We submitted records requests for Subpart CC compliance reports for all refineries in Texas and all refineries regulated by the BAAQMD and SCAQMD. The Texas Commission on Environmental Quality has not produced any of the requested reports for Texas refineries, and BAAQMD and SCAQMD collectively produced reports for three refineries.

TABLE A: PRESSURE RELIEF DEVICE (PRD) RELEASES TO THE ATMOSPHERE UNDER 40 C.F.R. § 63.648(j)(3), AS REPORTED BY PETROLEUM REFINERIES

Refinery	Semi-annual Reporting Period	PRD Releases to Atmosphere Under § 63.648(j)(3)	Citation in Facility Compliance Report and/or Notice of Compliance (see attachments to this petition)
BP Whiting (IN)	1 st half 2019 (beginning Jan 30 for PRDs)	None	see Table 14 on p. 21
Chalmette Refining (LA)	Jan 16 – July 15, 2019	None	see Reporting Requirement No. 20
Citgo Lake Charles (LA)	1 st half 2019	None	see pdf p. 5
Citgo Lake Charles (LA)	2 nd half 2019	None	see pdf p. 7
Exxon Baton Rouge (LA)	1 st half 2019	1 3-minute release (90 lbs benzene)	see pdf pp. 15-17
Marathon Garyville (LA)	1 st half 2019	None	see attachment 8
Motiva Port Arthur (TX)	1 st half 2019	None	see pdf p. 3 (listing 3 PRDs with readings above 500 ppm; no indication of PRD releases under § 63.648(j)(3))
Phillips 66 Alliance (LA)	Jan 15 – July 14, 2019	None	see section 1.9 of Attachment A
Phillips 66 Lake Charles (LA)	Jan 15 – July 14, 2019	None	see p. 9
Shell Deer Park (TX)	1 st half 2019	None	see pdf p. 6
Shell Norco (LA)	1 st half 2019	None	see Attachment 3
Shell Norco (LA)	2 nd half 2019	None	see Attachment 3
Tesoro L.A. Carson, Wilmington (CA)	Jan 30 – June 30, 2019	None	see pdf p. 1, Attachment 1
Tesoro Martinez (CA)	Jan 30 – June 30, 2019	None	see pdf p. 2, Attachment 1 (also separate notification of compliance status, pp. 1-3, indicates 52 PRDs capable of releasing to the atmosphere)
Benicia (CA)	Jan 30 – June 30, 2019	None	see pdf p. 175 (also note that separate notification of compliance status, at pp. 2-4, indicates 31 PRDs that are capable of releasing to the atmosphere)
Valero Houston (TX)	1 st half 2019	None	see PDF pp. 5-6 (noting total of two PRDs in HAP service)

Notes: The above table lists—for petroleum refineries with uncontrolled PRDs—data from 40 C.F.R. Part 63, Subpart CC semi-annual compliance reports that Petitioners were able to locate online and obtain through public information requests. More specifically, the table reflects compliance data (for at least one six-month period) from all of the active petroleum refineries in

Louisiana that both (1) submitted data in response to EPA’s Information Collection Request for the 2015 refinery sector risk and technology review and (2) had uncontrolled PRDs—except for the following refineries for which we could not locate Subpart CC compliance reports on the Louisiana Department of Environmental Quality’s Electronic Document Management System: Placid Refining in Port Allen, Calcasieu Refining in Lake Charles, Calumet in Princeton, Calumet in Shreveport, Calumet in Cotton Valley, and Shell in Convent. (In their compliance reports, owners/operators of the following Louisiana refineries stated that they had no PRDs subject to § 63.648(j)(3)—Alon Krotz Springs, Valero Meraux, and Valero Saint Charles.) In addition, the above table lists compliance data for the BP Whiting refinery in Indiana (the only petroleum refinery in that state), and three Texas refineries whose full Subpart CC compliance reports Commenters were able to locate on the website of the Texas Commission on Environmental Quality. Finally, the table also lists compliance data gleaned from Subpart CC semi-annual compliance reports for certain refineries in California, obtained through public information requests to the SCAQMD and the BAAQMD.

Petitioners are submitting the cited facility compliance reports and the notifications of compliance status discussed above with this petition. In addition, the cited compliance reports that are available online can be found through the websites of the state environmental agencies in Louisiana,⁹⁹ Indiana,¹⁰⁰ and Texas,¹⁰¹ or by request to the relevant air permitting authorities.

⁹⁹ See <https://edms.deq.louisiana.gov/app/doc/querydef.aspx>.

¹⁰⁰ See <https://vfc.idem.in.gov/DocumentSearch.aspx>.

¹⁰¹ See https://records.tceq.texas.gov/cs/idcplg?IdcService=TCEQ_SEARCH.