

**United States Court of Appeals**  
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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Argued November 9, 2017

Decided July 6, 2018

No. 15-1487

SIERRA CLUB AND NATURAL RESOURCES DEFENSE COUNCIL,  
PETITIONERS

v.

ENVIRONMENTAL PROTECTION AGENCY AND E. SCOTT  
PRUITT,  
RESPONDENTS

BRICK INDUSTRY ASSOCIATION, ET AL.,  
INTERVENORS

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Consolidated with 15-1492, 15-1493, 15-1496, 16-1179

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On Petitions for Review of a Final Action of the  
United States Environmental Protection Agency

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*James S. Pew* argued the cause and filed the briefs for  
Environmental petitioners.

*William L. Wehrum, Felicia H. Barnes, Todd E. Palmer, Valerie L. Green, Cameron F. Field, Howard L. Gilberg, Jean M. Flores, Jeffrey S. Longworth, Charles M. Denton, and Roger J. Marzulla* were on the joint briefs for Industry petitioners.

*Kate R. Bowers*, Attorney, U.S. Department of Justice, argued the cause for respondents. With her on the brief were *Sonya J. Shea*, Attorney, and *Sonja L. Rodman* and *Scott J. Jordan*, Attorneys, U.S. Environmental Protection Agency.

*Felicia H. Barnes* argued the cause for Industry respondent-intervenors. With her on the joint brief were *William L. Wehrum Jr., Todd E. Palmer, Valerie L. Green, Cameron F. Field, Jeffrey S. Longworth, and Charles M. Denton*.

*James S. Pew* was on the brief for Environmental respondent-intervenors.

Before: ROGERS and MILLETT, *Circuit Judges*, and SENTELLE, *Senior Circuit Judge*.

Opinion for the Court filed by *Senior Circuit Judge* SENTELLE.

SENTELLE, *Senior Circuit Judge*: In this consolidated proceeding, we consider petitions for review of an Environmental Protection Agency (“EPA”) final rule entitled “NESHAP for Brick and Structural Clay Products Manufacturing; and NESHAP for Clay Ceramics Manufacturing,” 80 Fed. Reg. 65,470 (Oct. 26, 2015) (“Brick/Clay Rule”), and its partial denial of reconsideration of that rule, 81 Fed. Reg. 31, 234 (May 18, 2016).

In Case No. 15-1487, petitioners Sierra Club and Natural Resources Defense Council (collectively, “Environmental Petitioners”) contend that the EPA erred in its use of health-based standards for acid gas emissions, failed to properly explain its methodology in setting maximum achievable control technology-based standards, and improperly allowed brick plants to meet alternative emissions floors. In Case Nos. 15-1492, 15-1493, 15-1496, and 16-1179, the Brick Industry Association, the Tile Council of North America, Inc., and the Kohler Company (collectively, “Industry Petitioners”) contend that the EPA made multiple errors in its methodology in the Brick/Clay Rule.

Finally, the EPA moved to sever and hold in abeyance the Industry Petitioners’ petition for review while it reconsiders the Brick/Clay Rule. Industry Petitioners supported the motion; the Environmental Petitioners opposed the motion to hold the entire case in abeyance but not EPA’s motion to sever and hold in abeyance the Industry Petitioners’ petition. *See* Unopposed Mot. at 2, Doc. No. 1703072 (Filed Nov. 3, 2017). We deferred consideration of the motion pending oral argument. We now deny the motion and consider this case on its merits. For the reasons stated below, we deny Industry Petitioners’ petition for review and grant in part that of the Environmental Petitioners and remand the Brick/Clay Rule to the agency for further proceedings consistent with this opinion.

## **I. Background**

Under the Clean Air Act (“CAA”), the EPA regulates all major and area sources of hazardous air pollutants. 42 U.S.C. § 7412(d)(1). There are 189 hazardous air pollutants subject to regulation under the CAA, including hydrogen chloride, hydrogen fluoride, chlorine, and heavy metals such as mercury. *Id.* § 7412(b)(1). During the regulatory process, the

EPA identifies categories of sources that generate hazardous air pollutants, and then sets emissions limits for each major source category. *Id.* § 7412(c)(1)-(2), (d)(1).

The EPA found that kilns emit hazardous acid gases, primarily hydrogen chloride (HCl), hydrogen fluoride (HF), and chlorine (Cl<sub>2</sub>). 80 Fed. Reg. at 65,473. Each of these acid gas pollutants causes health issues, such as asthma, respiratory problems, skin irritation, burns, low blood pressure, and, in severe cases, death. Regulatory Impact Analysis: Final Brick and Structural Clay Products NESHAP at 4-28 to 4-30, Docket # EPA-HQ-OAR-2013-0291-0665 (July 2015). Kilns also emit heavy metal pollutants, such as mercury, lead, arsenic, and other particulate matter. 80 Fed. Reg. at 65,473. Heavy metal pollutants also cause health issues, such as neurological damage, respiratory harm, and cancer, and threaten the natural environment. Regulatory Impact Analysis at 4-27 to 4-33, Docket # EPA-HQ-OAR-2013-0291-0665.

Once the EPA listed brick and ceramic kilns as a major source of hazardous air pollutants, it was required to regulate them. 42 U.S.C. § 7412(e)(1)(E). In 2003, the EPA first undertook the regulation of kiln emissions under the CAA. 68 Fed. Reg. 26,690 (May 16, 2003) (“2003 Rule”). In 2007, this Court held that the 2003 Rule did not comply with the CAA and vacated it. *Sierra Club v. EPA*, 479 F.3d 875, 876 (D.C. Cir. 2007) (per curiam) (“*Sierra I*”). In 2012, Sierra Club brought suit against the EPA to force it to promulgate regulations to replace the vacated 2003 Rule. *Sierra Club v. EPA*, 850 F. Supp. 2d 300, 301 (D.D.C. 2012). In 2014, after years of data collection, the EPA proposed a new rule to replace the vacated standards for kiln emissions. 79 Fed. Reg. 75,622 (Dec. 18, 2014). On October 26, 2015, the EPA published the final Brick/Clay Rule. 80 Fed. Reg. at 65,470. Industry Petitioners then submitted a petition for reconsideration of the

Brick/Clay Rule, which the EPA denied in relevant part. 81 Fed. Reg. 31,234 (May 18, 2016).

The Brick/Clay Rule and the EPA's partial denial of reconsideration are the subjects of the petitions in this consolidated case. The Brick/Clay Rule applies to brick, clay, and tile kilns. The emissions standards for brick and structural clay products, such as clay pipe and roof tile, are published in the Brick/Clay Rule and codified at 40 C.F.R. pt. 63, subpt. JJJJJ. 80 Fed. Reg. at 65,520. The emissions standards for clay ceramic products, such as pressed tile and sanitaryware (e.g., toilets and sinks), are published within the Brick/Clay Rule, titled the National Emissions Standards for Hazardous Air Pollutants for Clay Ceramic Manufacturing ("Clay NESHAP"), codified at 40 C.F.R. pt. 63, subpt. KKKKK. 80 Fed. Reg. at 65,543.

Now, the Brick Industry Association petitions for review of the Brick/Clay Rule as applicable to the brick industry and for review of the EPA's denial of reconsideration of the Brick/Clay Rule. The Kohler Company petitions for review of the Clay NESHAP. The Tile Council of North America petitions for review of certain provisions of the Clay NESHAP applicable to the subcategory of ceramic tile manufacturing ("Tile NESHAP"). Finally, the Environmental Petitioners petition for review of the Brick/Clay Rule as applicable to all the Industry Petitioners. Industry Petitioners intervened on behalf of the EPA in response to the Environmental Petitioners' petition; the Environmental Petitioners intervened on behalf of the EPA in response to the Industry Petitioners' petitions.

## **A. Clean Air Act Framework for Emissions Standards**

The CAA governs the setting of emissions standards using technology and health thresholds. 42 U.S.C. § 7412(d). When these types of limits are not feasible, the EPA may substitute alternative methods to limit emissions such as operational controls. *Id.* § 7412(h).

### ***1. Maximum Achievable Control Technology Emissions Standards***

The 1990 amendments to the CAA directed the EPA to issue emissions limits using technology-based standards, called “Maximum Achievable Control Technology” (“MACT”). MACT standards require the “maximum degree of [emissions] reductions” that the EPA “determines is achievable.” 42 U.S.C. § 7412(d)(2); *see Sierra I*, 479 F.3d at 877. The emissions standards for new sources must be no “less stringent than the emission control that is achieved in practice by the best controlled similar source.” 42 U.S.C. § 7412(d)(3). Congress adopted this MACT-based scheme because the EPA’s previous use of health-based standards had been “problematic,” because of uncertainty over which pollutants pose a health risk. *NRDC v. EPA*, 529 F.3d 1077, 1079 (D.C. Cir. 2008).

In establishing a MACT emissions standard, the EPA defines a minimum stringency requirement, or “floor,” based on emissions levels achieved by existing sources. 42 U.S.C. § 7412(d)(3)(A), (B); *Sierra I*, 479 F.3d at 877. For categories and subcategories of existing emissions sources composed of thirty or more individual sources, the EPA sets the MACT floor using “the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information).” 42 U.S.C.

§ 7412(d)(3)(A). If there are fewer than thirty individual sources, the EPA sets the MACT floor using “the average emission limitation achieved by the best performing 5 sources.” *Id.* § 7412(d)(3)(B). The EPA may set more stringent standards than the MACT floor if the more stringent standard is achievable considering cost and other factors. *Id.* § 7412(d)(2); *U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 594-95 (D.C. Cir. 2016) (per curiam) (“*U.S. Sugar*”), *cert. denied sub nom. American Mun. Power v. EPA*, 137 S. Ct. 2296 (2017).

## ***2. Alternatives to MACT Standards***

Alternatively, the EPA may use a health threshold rather than MACT standards for “pollutants for which a health threshold has been established.” 42 U.S.C. § 7412(d)(4); *see U.S. Sugar*, 830 F.3d at 623-24. Such a health-based standard must include an “ample margin of safety.” 42 U.S.C. § 7412(d)(4). Additionally, if the EPA determines it is “not feasible” to prescribe either a health- or technology-based emissions standard the agency may promulgate a design, equipment, work-practice, or operational standard. *Id.* § 7412(h).

## **B. Brick/Clay Rule**

In the Brick/Clay Rule, the EPA set MACT standards to regulate heavy metal emissions from kilns and health thresholds to regulate acid gas emissions. 80 Fed. Reg. at 65,471.

### ***1. Heavy Metal Emissions***

The EPA chose to regulate heavy metal emissions in the Brick/Clay Rule using MACT standards under § 7412(d)(1). 80 Fed. Reg. at 65,471. In setting the brick MACT floor, the

EPA set separate standards for particulate matter (which it used as a surrogate for nonmercury hazardous metals) and mercury, with subcategories for large tunnel and small tunnel brick kilns. *Id.* at 65,530-31. Additionally, the EPA provided “alternative equivalent limits” for heavy metal emissions from brick kilns. *Id.* at 65,474, 65,485. There were more than thirty individual sources for each category, so the best twelve percent of performers were used to set the brick MACT floor. *Id.* at 65,485.

The Clay NESHAP sets separate MACT standards for subcategories of floor tile, wall tile, and sanitaryware that are heavy metal emissions sources. *Id.* at 65,478. In response to an EPA information request, Kohler activated a decommissioned emissions scrubber at its South Carolina Kiln 10 (“Kiln 10”), and that data was used as one of the best performing sources in setting the corresponding MACT floor. *See id.* at 65,510; *see also* 81 Fed. Reg. at 31,235. The Tile NESHAP regulates emissions for a subcategory of ceramic tile plants and has separate dioxin/furan and mercury emissions standards. 80 Fed. Reg. at 65,554. Because fewer than thirty sources exist for each category of clay and tile kilns, the average of the five best performers was used to set the clay and tile MACTs. *See id.* at 65,504 n.102, 65,510.

Both Industry and Environmental Petitioners challenge the EPA’s methods of setting various MACT floors as unlawful and arbitrary. We will address the background of those methods in further detail with respect to the individual petitions for review.

## ***2. Acid Gas Emissions***

The EPA regulates hazardous acid gas emissions for new and existing brick tunnel kilns and all ceramics kilns

except for sanitaryware shuttle kilns in the Brick/Clay Rule using health thresholds under § 7412(d)(4). 80 Fed. Reg. at 65,471, 65,474, 65,478. Environmental Petitioners contend that EPA's choice of health thresholds over a MACT standard means that kiln facilities largely will not need to add more pollution controls. Environmental Petitioners challenge EPA's use of health thresholds and the methods it used to set the thresholds as contrary to the CAA. We will address the background of the EPA's reasoning in setting the health thresholds in the context of the Environmental Petitioners' petition for review.

## **II. Standard of Review**

EPA's final rule is subject to judicial review under 42 U.S.C. § 7607(b)(1). We will set aside an EPA action under the CAA if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 42 U.S.C. § 7607(d)(9)(A). We review EPA's interpretation of the CAA under the two-step framework of *Chevron U.S.A., Inc. v. NRDC, Inc.*, 467 U.S. 837 (1984). We first determine if Congress has "directly spoken to the precise question at issue." *Id.* at 842. If so, then we must "give effect to the unambiguously expressed intent of Congress." *Id.* at 843. If, however, "the statute is silent or ambiguous with respect to the specific issue," we defer to the EPA's interpretation of the CAA so long as it "is based on a permissible construction of the statute." *Id.*

Under these standards, we review in turn the Environmental Petitioners' and the Industry Petitioners' petitions for review.

### **III. Environmental Petitioners' Petition**

The Environmental Petitioners petition this Court to review the Brick/Clay Rule, claiming that it is unlawful and arbitrary. They argue that the EPA erred in its use of health thresholds to regulate acid gas pollutants, in its use of the upper prediction limit method in setting MACT floors, and in its provision of alternative MACT floors for brick kilns.

#### **A. Health Thresholds for Acid Gas Emissions**

The Environmental Petitioners mount a three-part challenge to the EPA's use of health thresholds to regulate acid gas emissions. First, the Environmental Petitioners argue that the EPA violated the CAA by concluding that the acid gas pollutants do not pose a cancer risk. Second, Environmental Petitioners argue that the EPA violated the CAA and was arbitrary in its determination of the health thresholds for the acid gas pollutants' noncarcinogenic risks. Finally, they contend that the EPA violated the CAA by failing to include an ample margin of safety in the health threshold.

##### ***1. Cancer Risks***

Petitioners contend that the EPA violated the CAA by concluding that the acid gas pollutants do not pose a cancer risk. Under the CAA, the EPA may implement a health threshold-based emissions limit for "pollutants for which a health threshold has been established." 42 U.S.C. § 7412(d)(4). The EPA and Environmental Petitioners agree, though for differing reasons, that the EPA should not implement health thresholds in lieu of MACT standards for carcinogenic pollutants.

Under *Chevron* step one, Environmental Petitioners argue that the EPA acted contrary to the clear meaning of the word “established” in 42 U.S.C. § 7412(d)(4)—“to put beyond a reasonable doubt: prove,” WEBSTER’S NEW COLLEGIATE DICTIONARY 284 (7th ed. 1971)—by concluding based on mere lack of evidence that hydrogen chloride, hydrogen fluoride, and chlorine do not cause cancer. Likewise, the Environmental Petitioners argue that the term “health threshold” in § 7412(d)(4) unambiguously requires the EPA to identify the specific amount of a pollutant that lacks any health risk. Because the EPA did not rely on conclusive proof that the acid gas pollutants are noncarcinogenic, the Environmental Petitioners assert that the EPA violated the plain language of the CAA requiring it to find an “established” “health threshold” when formulating health-based standards under § 7412(d)(4).

We cannot resolve this case at step one as Environmental Petitioners urge. In other contexts, we have held that the “EPA is not obligated to conclusively resolve every scientific uncertainty before it issues regulation.” *White Stallion Energy Ctr., LLC v. EPA*, 748 F.3d 1222, 1245 (D.C. Cir. 2014) (per curiam), *rev’d on other grounds by Michigan v. EPA*, 135 S. Ct. 2699 (2015). The statutory term “established” does not unambiguously require that the EPA prove its scientific conclusions beyond all possible doubt. Nor does the term “health threshold” require that the EPA find a specific threshold that lacks uncertainty. With respect to scientific conclusions, “established” and “health threshold” are ambiguous terms and we give deference to the EPA to the extent its interpretations fall within the bounds of reasonableness.

The Environmental Petitioners separately argue that the EPA acted unreasonably in concluding that it was “established” that the acid gases present no cancer risk. The Environmental

Petitioners contend that the EPA's reliance on the lack of expert data on the cancer risks of these pollutants is insufficient to demonstrate that their non-carcinogenic nature was "established."

The EPA counters that it is not required to prove a negative and that its interpretation of "established" is based on its expert judgment that it need not find "universal agreement" that the acid gases pose no cancer risk. To reach its conclusion, the EPA reviewed toxicity assessments in several databases and opinions from scientific bodies and found that none classified the three acid gas pollutants as carcinogens or as "suggestive of the potential to be carcinogenic." 80 Fed. Reg. at 65,488. Further, the EPA searched for existing studies regarding the cancer risk of the acid gases and found that, though the studies are limited in scope, none proved any carcinogenic potential. *Id.* at 65,488-89.

The EPA has not provided a sufficient record to determine that there is no cancer risk. The EPA noted that for hydrogen chloride "[l]ittle research has been conducted on its carcinogenicity." 79 Fed. Reg. at 75,639-41; *see also* 80 Fed. Reg. at 65,488-90. In addressing the cancer risk of chlorine, the EPA reviewed limited studies of workers in the chemical industry. 80 Fed. Reg. at 65,489. In addition to reviewing limited studies of workers, EPA also reviewed studies involving rodents and non-human primates. *Id.* With respect to hydrogen fluoride, the EPA observed there was a "limited number of studies investigating the carcinogenic potential of [Hydrogen Fluoride]" and "[t]hese studies are unreliable on the issue of possible carcinogenicity of [Hydrogen Fluoride] and/or fluorides, in general, because of many confounding factors . . . and because no breakdown was done by type of fluoride exposure." *Id.* at 65,488. This is not merely a situation in which the EPA relies on the results of scientific studies that

were unable to demonstrate a cancer risk to “prove a negative.” Rather, the EPA relies on the lack of *any* significant studies. The EPA failed to explain how it was able to reach the conclusion that the acid gas pollutants do not pose a cancer risk despite the admittedly limited body of research. Because of this acknowledged lack of evidence, the EPA did not base its findings on substantial evidence.

Therefore, the EPA acted unreasonably by concluding that it is “established” that the acid gas pollutants pose no cancer risk. Accordingly, we grant the Environmental Petitioners’ petition on this issue.

## ***2. Noncarcinogenic Risks***

Second, Environmental Petitioners argue that the EPA violated the CAA and was unreasoned and arbitrary by relying on low confidence evidence for the health risks of hydrogen chloride, by declining to use the California Environmental Protection Agency’s reference concentrations for hydrogen chloride, and by not shielding the public from acute exposure to hydrogen fluoride.

### *a. Hydrogen Chloride*

With respect to the noncarcinogenic health threshold for hydrogen chloride, Environmental Petitioners argue that the EPA violated the CAA’s requirement that the health threshold be “established” by relying on a low confidence reference concentration value in setting the emissions limit. The Environmental Petitioners assert that any deference to the EPA’s interpretation of “established” does not extend to allowing the EPA to use a single low-confidence, low-quality risk assessment to conclude that a threshold is “established.” Further, the California EPA uses a more conservative reference

concentration for the amount of hydrogen chloride that does not pose a health risk, and the EPA failed to explain why it used a different reference concentration.

The EPA explained that the “low confidence” label means that it has low confidence in the derivation of the hydrogen chloride reference concentration below which no adverse health risks were expected to occur because the existing data were incomplete and the reference concentration is subject to change as new data are developed. 80 Fed. Reg. at 65,489-90. Further, the EPA asserted that though reference concentrations are assigned high, medium, and low confidence values based on the supporting database, even a low confidence value is reliable enough for regulatory use. *Id.* at 65,490. The EPA stated that it did not use the California EPA’s hydrogen chloride reference concentration because of its general preference “favoring EPA benchmarks.” *Id.* at 65,491.

The EPA’s statement that “low confidence” reference concentrations are suitable for regulatory purposes lacks any supporting reasoning. The EPA did not explain how the health threshold could be established if low confidence reference concentrations are subject to change. This lack of reasoning is compounded by the EPA’s failure to explain why low confidence data were enough to demonstrate an “established” limit less strict than the California EPA threshold. Because the EPA acted unreasonably in finding that the noncarcinogenic health threshold for hydrogen chloride was established, we grant the Environmental Petitioners’ petition as to this issue.

*b. Hydrogen Fluoride*

With respect to the hydrogen fluoride health threshold, the Environmental Petitioners argue that the emissions limits do not protect the public from the health effects of acute

exposure, as required for health thresholds. *See* 42 U.S.C. § 7412(d)(4). In both the brick and ceramics risk assessments, the EPA found that some kilns had the potential to exceed the health threshold for acute exposures, but concluded there was a “low potential” for health effects. The EPA calculated a hazard quotient of two for these acute exposures, where a hazard quotient less than one indicates low potential for acute health risk. 80 Fed. Reg. at 65,503.

EPA argues that the hazard quotient calculation is conservative. First, the hazard quotient calculation uses the conservative California EPA acute reference concentration to calculate the exposure level and if it had applied its own reference level, there would have been a hazard quotient less than one. However, the EPA does not offer a calculation or explanation to confirm this assertion. Second, the EPA’s acute exposure scenario conservatively assumes that someone is present at a time with both worst-case emissions and worst-case weather conditions. Finally, the EPA reasoned that it was unlikely a facility would emit only hydrogen fluoride at the maximum permitted concentration rather than a combination of other gases.

EPA’s reasoning is flawed. As we held in the hydrogen chloride analysis, the EPA failed to explain why it would be appropriate to use a less conservative standard than the California EPA level. Thus, even assuming that use of EPA’s reference level would have resulted in below-one hazard quotients, EPA fails to show that the hazard quotient calculation performed protects from acute exposure. Likewise, the EPA failed to explain why “no adverse health effects are expected to occur,” 80 Fed. Reg. at 65,491, in the worst-case scenario of peak emissions during worst-case weather. The EPA does not adequately explain how a hydrogen fluoride emissions limit based on an “established health threshold” can

permit potential health risks from acute exposure. Therefore, we grant the Environmental Petitioners' petition as to this issue.

### 3. *Ample Margin of Safety*

Third, Environmental Petitioners argue that the EPA violated the CAA by failing to include an ample margin of safety. For health-based standards, the CAA directs the EPA to set a "threshold level, with an ample margin of safety." 42 U.S.C. § 7412(d)(4). Environmental Petitioners argue that, by failing to do so, the EPA violated the plain language of the CAA.

EPA responds that it is entitled to deference in determining "how" to provide the ample margin of safety because the statute does not provide unambiguous direction. According to EPA, we should defer to its interpretation that an ample margin of safety can be built into a health threshold by using "conservative" modeling assumptions that provide the margin of safety "at multiple points in the process." The Environmental Petitioners counter that the word "with" requires that the ample margin of safety be added to the health threshold.

The EPA offered a limited description of how it built a margin into its model by adopting conservative assumptions. 80 Fed. Reg at 65,501. First, the EPA identified the source that produced the highest modeled ambient concentration of hazardous air pollutants. *Id.* Then, the EPA modeled that source, with worst-case weather and worst-case population proximity, and scaled up its emissions until it reached a hazard quotient of one, at which point it would be expected to affect human health. The EPA used that scaled-up emissions value as the health-based emissions limit. *Id.* Because it is unlikely

that any source would ever experience both worst-case weather and population proximity when maximum emissions occur, the EPA concluded that its emissions limit was “health protective” and provides an ample margin of safety. *Id.* In this conservative model, however, the EPA still found cases that exceeded the hazard quotient of one, indicating a human health risk, but nonetheless concluded that there was a low potential for health impacts because it is unlikely that a person will be present at the place and time when maximum risk occurs. 80 Fed. Reg. at 65,502-03.

Though we agree that the EPA is entitled to deference in determining how to include an ample margin of safety in the health threshold, the question is whether the EPA provided any margin of safety at all. The EPA’s model actually demonstrates a situation in which a source could emit up to the emissions limit and, together with worst-case weather or population proximity, the source could meet or exceed the health threshold. Therefore, the EPA has not offered a sufficient explanation of how its model includes an ample margin of safety to the health threshold. Because the EPA did not meet the CAA requirement to include an ample margin of safety in the health threshold, we grant the Environmental Petitioners’ petition as to this issue.

For the reasons stated above, we grant the Environmental Petitioners’ petition for review of the EPA’s setting of a health threshold for the acid gases.

#### **B. Use of the Upper Prediction Limit to Set MACT Floors**

The Environmental Petitioners next contend that the EPA’s methodology in setting the MACT floors is inconsistent with the CAA. The EPA used a method called the “upper

prediction limit,” which is a statistical tool that allows the EPA to estimate the best performing source from a limited data set and account for the variability inherent to emissions and emissions testing. *See generally National Ass’n of Clean Water Agencies v. EPA* (“NACWA”), 734 F.3d 1115, 1122, 1144-45 (D.C. Cir. 2013). The EPA used the upper prediction limit for twenty-two of the brick MACT floors and twenty-seven of the clay MACT floors. A number of the brick and clay MACT floors were based on datasets that EPA concedes were “limited.”

The EPA relies on “stack tests” to sample actual kiln emissions. *See Use of the Upper Prediction Limit for Calculating MACT Floors* (“HA for Calculating MACT Floors”) at 2, Docket # EPA-HQ-OAR-2013-0291-0128 (Sept. 9, 2014). The EPA generally collects and tests emissions from a source three times, each for a discrete period of time, capturing snapshots of the emissions. *See NACWA*, 734 F.3d at 1122. However, emissions vary over time and there are variations in testing equipment and laboratories; stack tests do not measure the emissions at all times and under all conditions. *Id.* Because stack test emissions results are variable, the upper prediction limit applies statistical methods to the results in order to derive an emissions limit that accounts for that variability within a specified degree of confidence. *See id.* The upper prediction limit equation factors in the average of the best performing source’s stack test results, the distribution of the results, the variance of the results, and the total number of tests in order to calculate a MACT floor. UPL for Calculating MACT Floors at 4-5.

We “accord[] *Chevron* deference to [the EPA’s] interpretation of [the CAA] as allowing it to estimate MACT floors.” *U.S. Sugar*, 830 F.3d at 636 (third alteration in original). The EPA has “wide latitude” in its data gathering to

set the MACT floor. *Id.* This Court has discussed the EPA's application of the upper prediction limit method to calculate MACT floors.

In *NACWA*, our key concern was whether the EPA had provided a reasoned basis to conclude that the upper prediction limit represents the CAA's "average emissions limitation achieved." *NACWA*, 734 F.3d at 1130, 1139-45; *see also U.S. Sugar*, 830 F.3d at 633. We held that the EPA "ha[d] not clearly explained how the upper prediction limit itself operates to predict [the best performing sources' upper limit] with sufficient accuracy" or "how the upper prediction limit can actually predict the upper limit EPA expects the best performing unit or units to achieve." *NACWA*, 734 F.3d at 1144-45.

In *U.S. Sugar*, the EPA provided the explanation that had been lacking in *NACWA*, describing the limitations of stack-test data, why the agency chose to use the upper prediction limit, and how and why the upper prediction limit accounts for variability in test results. *U.S. Sugar*, 830 F.3d at 636-37. EPA explained how the upper prediction limit "allows a reasonable inference" regarding the emissions of top performing units, and upon review we held that the EPA "ha[d] conducted reasoned decision making." *Id.* at 636. Thus, we accepted the upper prediction limit as consistent with the CAA, but with the caveat that whether it could be reasonably applied to small datasets remained an open question. *Id.* at 633 n.25.

In this case, EPA has sufficiently explained the application of the upper prediction limit to small datasets, but in five cases failed to explain adjustments made to individual upper prediction limit calculations. The EPA defined a "limited dataset" as having between three and six data points, and explained why it was possible to use datasets with as few

as three data points, though no fewer so long as the EPA engages in further evaluation. Approach for Applying the Upper Prediction Limit to Limited Datasets (“Brick Limited Datasets Memo”) at 5-6, Docket # EPA-HQ-OAR-2013-0291-0661 (Sept. 24, 2015); Approach for Applying the Upper Prediction Limit to Limited Datasets (“Clay Limited Datasets Memo”) at 5-6, Docket # EPA-HQ-OAR-2013-0290-0295 (Sept. 24, 2015). Except where adjustments were made to results, Environmental Petitioners provide no reason to think that any of the results reached by applying the upper prediction limit to limited datasets are unreasonable or inadequately explained. EPA failed, however, to adequately explain adjustments it made to five of the upper prediction limit results.

The EPA argues that it was sufficient for it to evaluate the “reasonableness” of the results produced by the upper prediction limit for small datasets on a case-by-case basis and then adjust the results to best estimate the reductions in emissions achieved by the best performing sources. Brick Limited Datasets Memo at 6-10. EPA made no adjustments to its upper prediction limits results for the Clay MACT floors. Clay Limited Datasets Memo at 8. For brick plants, the EPA made five adjustments to MACT floors because it concluded that the upper prediction limit produced unreasonable results. Brick Limited Datasets Memo at 8-10. In two of those cases, EPA rejected datasets that were in fact from the best performing source, resulting in a MACT floor that was derived from the second best performing unit rather than the best performing. *Id.* at 8-9.

Although EPA adequately explains the general bases for its evaluation and adjustment, *id.* at 6-8, the agency offered only cursory explanations of the specific choices it made in adjusting five of the floors. EPA also did not explain how using data from the second best performing unit instead of the best

performing unit comports with the CAA's requirements that MACT floors be calculated based on the best performing unit or units. *Id.* at 8-10. EPA must better explain its reasoning when performing such adjustments. For that we reason we grant Environmental Petitioners' petition as to the five adjusted floors. We deny the petition as to the other applications of the upper prediction limit to limited datasets.

### **C. Provision of Alternative Emissions Floors for Brick Plants**

The Environmental Petitioners argue that the EPA's decision to allow brick tunnel kilns to comply with "alternative" emissions floors is not authorized by the CAA. Rather than a single limit for each brick tunnel kiln subcategory, the EPA gave the brick industry a choice of three emissions limits expressed in different units of measurement for mercury (mass of pollutant per ton of bricks produced, pounds per hour, or concentration) and non-mercury emissions (pounds per hour and options that limit particulate matter as a surrogate). 80 Fed. Reg. at 65,474, 65,530-31.

The Environmental Petitioners argue that EPA's provision of alternative emissions limits violates the statute's plain language requiring the MACT floor to be set based on "the best" performing sources in a category. 42 U.S.C. § 7412(d)(3). Thus, it is contrary to the plain meaning of "best" to define several different groups of sources as "the best." The EPA counters that its interpretation of "best" should receive deference because Congress did not specify which unit of measurement the EPA should use to identify the best performing source. Different sources perform differently depending on the unit of measurement—for instance, a small kiln might produce a smaller volume of pollutants overall than a larger source but pollutes at a higher rate when emissions are

measured in pounds per hour. *See* Final [MACT] Floor Analysis for Brick and Structural Clay Products Manufacturing, at A-2, A-5, A-9, Docket # EPA-HQ-OAR-2013-0291-0660 (Sept. 24, 2015). The EPA argues it was reasonable for it to allow the industry to select which emissions limit unit of measurement their kilns must meet. We disagree.

The EPA has the authority to “distinguish among classes, types, and sizes” of emissions sources and set separate MACT floors for each. *See* 42 U.S.C. § 7412(d)(1). But once the EPA identifies a source in a category it must set the MACT floor based on the “best” performing sources. *Id.* § 7412(d)(3). EPA has the discretion to determine what metric to use in defining the “best” source, so long as it is reasonable. *Cf. Mossville Env. Action Now v. EPA*, 370 F.3d 1232, 1241 (D.C. Cir. 2004). However, the EPA’s discretion does not extend to defining several different “best” metrics within the same category and allowing emitters to comply with the most favorable standard. The alternative standards allow a kiln to avoid complying with a MACT floor defined by the best emissions achieved by other sources in its category, as required by the CAA. Because the EPA’s provision of alternate emissions standards is contrary to the statutory requirement of a standard based on the “best” performing sources, we grant the Environmental Petitioners’ petition as to this issue also.

#### **IV. Industry Petitioners’ Petition**

In four of the consolidated cases, Industry Petitioners petition for review of the Brick/Clay Rule by challenging the EPA’s methodology in setting the MACT floor for their respective categories and subcategories of kilns. We address in turn the Brick Industry Association’s petition for review of the brick MACT floor, the Tile Council’s petition for review of

the Tile NESHAP, and Kohler's petition for review of the Clay NESHAP.

#### **A. Brick MACT Floor**

With respect to the portion of the Brick/Clay Rule in which the EPA set the MACT floor for large and small tunnel brick kilns, the Brick Industry argues that: (1) EPA violated the CAA because it used synthetic minor sources to set the MACT floor for brick plant major sources; (2) EPA acted arbitrarily and capriciously because it did not explain its use of allegedly suspicious data in setting the particulate matter and nonmercury hazardous metal emissions standards; and (3) EPA violated the intent of Congress by setting mercury emissions standards which require raw material substitution.

##### ***1. Use of Synthetic Minor Sources in Setting MACT Floors***

First, the petitioner argues that the EPA violated the CAA because it used emissions data from synthetic minor sources to set the MACT floor for particulate matter and nonmercury hazardous metal emissions for brick plant major sources. The EPA uses particulate matter emissions as a surrogate for all nonmercury hazardous metal emissions. *See* 80 Fed. Reg. at 65,484.

As an initial matter, the EPA argues that the Brick Industry Association's petition for review is untimely because it failed to raise this issue when the EPA used synthetic minor sources to set the MACT floors in the 2003 Rule. We lack jurisdiction to review a claim unless the petition for review is brought within sixty days of the challenged action appearing in the Federal Register. *Medical Waste Inst. & Energy Recovery Council v. EPA*, 645 F.3d 420, 427 (D.C. Cir. 2011) (citing 42

U.S.C. § 7607(b)(1)). But this Court vacated the 2003 Rule. *Sierra I*, 479 F.3d at 876. The existence of a prior but now-vacated rule does not bar a later petition to review the replacement rule. *See Motor & Equip. Mfrs. Ass'n v. Nichols*, 142 F.3d 449, 460-61 (D.C. Cir. 1998). We now turn to the merits of the petition for review.

Because there are more than thirty sources in the brick plant source category, the EPA sets the MACT floor by determining “the average emission limitation achieved by the best performing 12 percent of the existing sources . . . in the category.” 42 U.S.C. § 7412(d)(3)(A). The petitioner argues that “synthetic minor sources” (also called “synthetic area sources”) are not major sources. Thus, the petitioner contends that the EPA’s inclusion of synthetic minor sources in the list of best performing major sources violates the statutory requirement that the EPA use data from sources “in the category.”

The EPA admits that it used emissions data from synthetic minor sources to set the MACT floor for brick plant major sources. A “major source” is defined as one that “emits or has the *potential to emit considering controls*, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.” 42 U.S.C. § 7412(a)(1) (emphasis added). An “area source” is defined as “any stationary source of hazardous air pollutants that is not a major source.” *Id.* § 7312(a)(2). The CAA does not define “synthetic minor source” or “synthetic area source.”

The EPA explained that a synthetic minor source emits lower quantities of hazardous air pollutants than a major source “because they use some emission control device(s), pollution prevention techniques or other measures . . . .” Summary of

Public Comments and Responses, at 46-47, Docket # EPA-HQ-OAR-2013-0291-0685 (Sept. 2015). However, “[i]f not for the enforceable controls they have implemented, synthetic minor sources would be major sources under . . . the CAA.” *Id.* at 47. The EPA’s definition of a synthetic minor source conforms to the plain text of the CAA, which states that major sources include sources with “the potential to emit considering controls.” 42 U.S.C. § 7412(a)(1).

Next, the Brick Industry argues that synthetic minor sources do not qualify as “in the category” of major brick plant sources, because treating them as in the same category deprives the phrase of any meaning. We disagree. In this case, the EPA has defined categories of small and large tunnel brick kiln sources, while excluding tile and other nonbrick sources, meaning the phrase “in the category” still has meaning. We defer to the EPA’s reasonable interpretation that “the category” should be defined as major brick sources, including those with the potential to emit to that level considering controls, such as synthetic minor sources, as required by the CAA.

Accordingly, we deny the Brick Industry Association’s petition for review because the EPA did not violate the CAA by using emissions data from synthetic minor sources to set the MACT floor for particulate matter and nonmercury metal emissions for brick plant major sources.

## ***2. Data Used to Set Particulate Matter MACT Floors***

Second, the Brick Industry Association argues that the EPA acted arbitrarily and capriciously because it did not correct, supplement, or reconcile suspicious data and used that data to set the MACT floor for particulate matter and nonmercury hazardous metal emissions from brick plants.

Brick plants may incorporate air pollution control devices, such as fabric filters or dry lime absorbers. *See* 79 Fed. Reg. 75,625. The Brick Industry Association argues that the EPA relied on erroneous data from kilns that use dry lime absorbers as the best performing sources without explaining why those sources performed unexpectedly better than the kilns equipped with fabric filters.

In the proposed Brick/Clay Rule, the EPA acknowledged that data showed that fabric filters were generally the best pollution control technology for particulate matter emissions. 79 Fed. Reg. at 75,635. Accordingly, the EPA proposed to determine the MACT floor based on the twenty-seven best performing fabric filter-based kilns, which it expected would represent the top twelve percent of the 255 operating major source and synthetic minor source brick tunnel kilns. *Id.* Along with the proposal, the EPA requested additional information to address whether low emissions data from nonfabric-filter kilns showing high performance were reliable. *Id.* The EPA noted that it could, in the alternative, set the particulate matter MACT floor based on the top twelve percent of all brick plants in each kiln size subcategory. *Id.* at 75,635 n.1. The EPA explained that “the reliability of the data showing low emissions from some kilns without a [fabric filter]-based [pollution control] is a key factor in the EPA’s determination of which approach is appropriate.” *Id.*

In the final Brick/Clay Rule, the EPA adopted this alternative approach, setting the particulate matter MACT floor based on the best performing twelve percent of kilns in each size subcategory without regard to the type of pollution controls used. 80 Fed. Reg. at 65,485. This resulted in a significantly more stringent control than expected in the proposed rule based on data from fewer sources because the

EPA had not collected as much data from nonfabric filter sources. *See Id.* at 65,484-85, 65,530. The Brick Industry Association objects to the EPA's adoption of this method, arguing that dry lime absorbers are "only incidentally effective" in controlling particulate matter emissions, therefore any data that shows these kilns are performing better than those with fabric filters is "technically not plausible." Therefore, the Brick Industry Association contends, the EPA relied on anomalous results and acted arbitrarily by failing to resolve the anomalies. Further, the Brick Industry Association argues that the EPA compounded its error by removing data points from kilns utilizing fabric filters.

In the final Brick/Clay Rule and upon reconsideration, the EPA explained that it received no data explaining why some kilns without fabric filters performed exceptionally well. 80 Fed. Reg. at 65,485. Further, the EPA noted that in some cases there were issues with probe and filter temperatures which invalidated the data from some fabric filter kilns, requiring that data to be thrown out. *Id.* at 65,484-85. Additionally, the EPA had observed in the proposed rule that the data from the dry lime absorber kilns showed that the fabric filters might not be the best performing filters as originally thought. 79 Fed. Reg. at 75,635.

In light of this admittedly unexpected result, the EPA reviewed the data to confirm that the tests were performed in normal operating conditions and requested additional data from the Brick Industry Association. *Id.* The Brick Industry Association provided a list of the dry lime absorber kilns that it recommended should be excluded from the top performing set of kilns, primarily speculating these kilns performed well because they had installed new limestone but offering no other concrete evidence or analysis in support of this speculation.

Email Re: DLA/Uncontrolled Kilns, Docket # EPA-HQ-OAR-2013-0291-0614 (June 25, 2015).

As we have already noted, “EPA typically has wide latitude in determining the extent of data-gathering necessary to solve a problem.” *Sierra Club v. EPA*, 167 F.3d 658, 662 (D.C. Cir. 1999). The EPA’s explanation of why it discarded some of the data from the fabric filter-based kilns and why it relied on the best twelve percent of all the sources for which it had data, rather than just the best performing fabric filter-based sources, was sufficiently reasoned and is entitled to deference.

Additionally, the Brick Industry Association argues that the EPA failed to respond to its comment containing the list of dry lime absorber kilns that it contends should have been excluded from consideration as best performing sources. The EPA has an obligation to respond to significant comments to the regulation. 42 U.S.C. § 7607(d)(6)(B). However, the EPA determined that the Brick Industry Association’s comment was not significant because it failed to offer any explanation or data showing the data from high-performing nonfabric filter kilns to be unreliable. We agree. Because the comment contained only speculation, without additional details, it was not “significant.”

Accordingly, we deny the Brick Industry Association’s petition for review because the EPA was not arbitrary or capricious when it used data from kilns that did not use fabric filters to set the MACT floor for particulate matter emissions from brick plants.

### ***3. Improper Requirement to Substitute Raw Materials***

Third, the Brick Industry argues that the EPA violated Congressional intent by setting mercury emissions standards

that require that the industry make raw material substitutions. Mercury content varies based on where clay is quarried, which can affect the resulting mercury emissions from kilns using the clay. 80 Fed. Reg. at 65,485. Relying on the legislative history, the Brick Industry Association argues that the 1990 amendment to the CAA prohibited the EPA from requiring material substitutions when it sets emissions standards. *See* H.R. Rep. No. 101-952, at 339 (1990) (Conf. Rep.). Further, the Brick Industry Association argues that the EPA acted unreasonably because it did not establish subcategories based on raw materials to avoid raw material substitutions.

“When setting the MACT floor, the EPA considers *only* the performance of the cleanest sources in a category or subcategory; it does not take into account other factors . . . .” *U.S. Sugar*, 830 F.3d at 594. This Court has held that the EPA is required to set a MACT floor that “reflect[s] what the best performers actually achieve,” and the EPA may not deviate from that by requiring that “floors must be achievable by all sources using MACT technology.” *Cement Kiln Recycling Coal. v. EPA*, 255 F.3d 855, 861 (D.C. Cir. 2001). Likewise, in addressing the 2003 Rule in *Sierra I*, we held that setting MACT floors based on technology controls alone was insufficient to satisfy the CAA’s requirements. 479 F.3d at 883. Nontechnology factors, such as the source of raw materials, can affect emissions levels and cannot be ignored. *Id.* In other words, the EPA need not consider whether all sources can achieve the MACT floor, and must still set the floor based on the emissions achieved by the best performers even though they have access to different raw materials than the other sources. *Id.*

Ultimately, though, the Brick Industry Association’s argument is misplaced. The EPA did not mandate a raw material substitution. The EPA responded to a comment by

stating that it is “not requiring the use of offsite raw materials in this rule.” Summary of Public Comments and Responses at 26. Furthermore, the EPA considered the effect of raw materials in defining the MACT floor and used a variability equation to factor in the variation in mercury content in clay quarries. 80 Fed. Reg. at 65,485. Additionally, the EPA considered the existence of potential control technology that would allow the industry to achieve the MACT floor without a raw material substitution. Summary of Public Comments and Responses at 26-27.

The EPA reasoned that some brick kilns could use an activated-carbon injection control device in order to achieve the MACT floor without a raw material substitution. *Id.* The Brick Industry Association contends that it is unreasonable for the EPA to consider this device because the EPA has not shown it would be effective. However, the EPA cited information showing that activated-carbon injection devices are effective in other industries in controlling mercury emissions from similar sources. Methodology and Assumptions Used to Estimate the Model Costs and Impacts of BSCP Air Pollution Control Devices for the Final Rule at 7-9, Docket # EPA-HQ-OAR-2013-0291-0662 (Sept. 24, 2015). Finally, in response to the Brick Industry Association’s comment that the EPA should have created subcategories based on the mercury content of the raw materials, instead of the size of the brick kilns, the EPA explained that it did not have enough information to create those subcategories, because the data did not show a strong correlation between raw material mercury and mercury emissions. Summary of Public Comments and Responses at 13.

The EPA relied on substantial evidence to conclude that technological controls are available to achieve the MACT floor without raw material substitution and made a reasoned decision

not to subcategorize based on the mercury content of raw materials. Likewise, the EPA is not required to set a standard that is achievable by all sources. Therefore, we deny the Brick Industry Association's petition for review.

### **B. Tile NESHAP**

The Tile Council of North America petitions for review of the Tile NESHAP. The petitioner first argues that the EPA violated the CAA by listing it as a major source because there are no longer any major source tile kilns and, further, that it was denied its right to comment on its listing. Next, the Tile Council argues that even if the EPA was permitted to promulgate the Tile NESHAP, the EPA erred by failing to perform a beyond-the-floor MACT analysis for dioxin/furan emissions.

The central issue in the Tile Council's petitions is its objection to the EPA's listing of tile kilns as a major source of hazardous air pollutants. In 2002, the EPA replaced a clay products manufacturing source category with two source categories: brick and structural clay products and clay ceramic products, the latter of which includes tile. 67 Fed. Reg. 47,894 (July 22, 2002). At the time, there were tile-manufacturing plants that were major sources of hazardous air pollutants. *Id.* at 47,914. Once an industry is listed as a major source of hazardous air pollutants, the EPA must establish emissions limits. 42 U.S.C § 7412(d)(1). In 2014, just before the EPA proposed the Brick/Clay Rule, all tile kilns that that would be subject to its emissions standards as major sources either closed or became synthetic area sources. TCNA Letter, Docket # EPA-HQ-OAR-2013-0290-0131 (Aug. 29, 2014).

As a threshold matter, we must address the Tile Council of North America's standing. Its membership is made up of

domestic ceramic tile manufacturing companies. To demonstrate that it has standing, the Tile Council must establish its injury is actual or imminent, not hypothetical. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992). When “standing is not self-evident, . . . the petitioner must supplement the record to the extent necessary to explain and substantiate its entitlement to judicial review.” *Sierra Club v. EPA*, 292 F.3d 895, 900 (D.C. Cir. 2002). The Tile Council asserts that it has standing because its members operate ceramic tile kilns that fall within the Tile NESHAP subcategory and those members have a direct financial and environmental stake in the Brick/Clay Rule.

The Tile Council admits that none of its members are major sources, and so they are not subject to the Tile NESHAP’s emissions limits. But the Tile Council argues that its members are constructing new kilns that may be subject to the major source emissions limits. Further, the Tile Council claims that its members expend resources to remain area sources and avoid being subject to emissions limits on major sources. The EPA argues that the Tile Council lacks standing because none of its members have suffered harm or face imminent harm from the emissions limits on major sources. We agree with the EPA. The Tile Council failed to identify any member that is injured or will imminently be injured by the Brick/Clay Rule. The Tile Council’s arguments regarding potential future injuries are merely speculative.

Likewise, the Tile Council of North America’s assertion that it has associational standing also fails. To establish associational standing, its members must have individual standing to challenge the Tile NESHAP in their own right. *Hunt v. Wash. State Apple Advert. Comm’n*, 432 U.S. 333, 342 (1977). Because we have concluded that the Tile Council of North America has not identified an injury or

imminent injury to any of its members from the Tile NESHAP, it has not demonstrated that its members have individual standing to challenge the rule in their own right. Therefore, the Tile Council of North America does not have associational standing.

Because we find that Tile Council of North America has no standing to petition for review of the Tile NESHAP, we need not address the petitioner's remaining arguments on their merits.

### **C. Clay NESHAP**

With respect to the Clay NESHAP, Kohler argues that the EPA violated the CAA by using emissions data that was not representative of any existing operating source to set the MACT floor for clay sanitaryware kilns. Because there are less than thirty sources in the clay kiln source category, the EPA sets the MACT floor based on "the average emission limitation *achieved* by the best performing 5 sources." 42 U.S.C. § 7412(d)(3)(B) (emphasis added). Specifically, Kohler argues that the EPA erred by including data from Kiln 10 as one of the best performing sources.

When Kohler constructed Kiln 10 in 2005, it installed a scrubber to comply with the now-vacated 2003 Rule for new sources. 80 Fed. Reg. at 65,510. In 2009, Kohler decommissioned the scrubber and now operates Kiln 10 without it. *Id.* However, the Kiln 10 scrubber remained functional and attached to the source. *Id.* During the data collection period, the EPA asked Kohler to reactivate the scrubber and EPA tested Kiln 10 while the scrubber was operating. *Id.*

We have repeatedly recognized that section 7412(d)(3) requires the floors to reflect emissions achieved “in practice.” *See, e.g., Cement Kiln*, 255 F.3d at 862; *Nat’l Lime Ass’n v. EPA*, 233 F.3d 625, 632 (D.C. Cir. 2000). It may seem that the “in practice” requirement supports Kohler’s argument that the data collected from Kiln 10 while it was using the scrubber was “artificial” and in performance of a test, not “in practice.” However, the statute does not specify when emissions achieved “in practice” occur. Likewise, the statute requires that the EPA consider the average emissions “achieved,” which contemplates that the performance could have occurred in the past. *See* 42 U.S.C. § 7412(d)(3).

Kohler operated Kiln 10 with the scrubber between 2005 and 2009. 80 Fed. Reg. at 65,510. The EPA correctly reasoned that emissions produced with a scrubber were “achieved” during that time. That the EPA chose to collect the data through a later test after Kohler decommissioned the scrubber rather than during its four years of operation is within the EPA’s discretion.

This Court considered a similar argument in a case regarding emissions standards for hospital waste incinerators. *Med. Waste Inst. & Energy Recovery Council v. EPA*, 645 F.3d 420 (D.C. Cir. 2011). In that case, we affirmed the EPA’s use of emissions data from a facility that had put controls in place to comply with a remanded, but not vacated, rule. *Id.* at 422, 424-25. Though in this case the EPA used data from a source with pollution controls that were put in place to comply with a rule that was vacated, this distinction is not of “outcome-changing significance.” *Id.* at 426.

We deny Kohler’s petition for review because the EPA did not violate the CAA when it used data from Kiln 10 as a

best performing source because the EPA reasonably concluded that Kiln 10 had achieved those emissions “in practice.”

## **V. Conclusion**

For the reasons set forth above, we deny the Industry Petitioners’ petitions for review and we grant the Environmental Petitioners’ petition for review as to (1) the EPA’s use of a health threshold to set the emissions limit for acid gases; (2) the EPA’s ad hoc adjustments of upper prediction limit calculations, and (3) the EPA’s provision of alternative MACT floors for brick plants. We deny the Environmental Petitioner’s petition for review as to the general application of the upper prediction limit to limited datasets as defined by the EPA. We remand the Brick/Clay Rule to the agency for further proceedings consistent with this opinion.