Revised November 13, 2000

IN THE UNITED STATES COURT OF APPEALS
FOR THE FIFTH CIRCUIT

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98-60495

CENTRAL AND SOUTH WEST SERVICES, INC.; ENTERGY SERVICES INC.; MISSISSIPPI POWER COMPANY; UTILITY SOLID WASTE ACTIVITIES GROUP,
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
Respondent.

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98-60642

THE GENERAL ELECTRIC COMPANY,
Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
Respondent.

_____

98-60804

SIERRA CLUB, a non-profit California corporation,
Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
Respondent.

_____

Petition for Review of Regulations of
the United States Environmental Protection Agency

_____

August 15, 2000

BEFORE DAVIS, CYNTHIA HOLCOMB HALL[*], and SMITH, Circuit Judges.

W. EUGENE DAVIS:

Petitioners challenge the Environmental Protection Agency's ("EPA") final "Mega Rule" ("Final Rule") concerning the use and disposal of polychlorinated biphenyls ("PCBs"). Petitioners Central and South West Services, Inc., Entergy Services Inc., Mississippi Power Company, Utility Solid Waste Activities Group

[*] Circuit Judge of the Ninth Circuit, sitting by designation.

(collectively "USWAG") and General Electric Co. ("GE") argue that discrete portions of EPA's Final Rule are too restrictive. Petitioner Sierra Club, argues that certain provisions of the Final Rule do not sufficiently restrict the use of PCBs. For the reasons that follow, we dismiss, or remand Petitioners's challenges to the Final Rule.

I
Facts and Procedural History

In 1976, Congress enacted the Toxic Substances Control Act ("TSCA"), directing EPA to control the manufacture, processing, distribution, use and disposal of chemical substances and mixtures. 15 U.S.C. § 2601 et seq. Congress enacted TSCA "to set in place a comprehensive national scheme to protect humans and the environment from the dangers of toxic substances." Rollins Environmental Services, Inc. v. St. James Parish, 775 F.2d 627, 632 (5th Cir. 1985). Section 6(e) of TSCA generally phased out the manufacture, processing, commercial distribution and use of a certain class of chemicals known as polychlorinated biphenyls, or more commonly "PCBs". 15 U.S.C. § 2605(e).

PCBs are a class of compounds that were manufactured for a variety of purposes, including cooling and lubricating transformers, capacitors and other electrical equipment. PCBs are particularly useful for these purposes because they do not burn easily and are excellent insulators. Monsanto Corp., the U.S.

manufacturer of PCBs, produced PCBs between 1930 and 1977. PCBs are also produced as a by-product in the production of various organic chemicals. The most recent EPA study on PCBs states that "PCBs are highly likely to pose a risk of cancer to humans." PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures, September 1996, ("1996 Reassessment").

TSCA permits EPA to issue rules authorizing certain uses of PCBs, but only if the agency finds that such use "will not present an unreasonable risk of injury to health or the environment." 15 U.S.C. § 2605(e)(2)(B). Section 6(e) also requires the Administrator to "promulgate rules to ... prescribe methods for the disposal of [PCBs]." 15 U.S.C. § 2605(e)(1)(A).

Pursuant to these statutory directions, EPA in 1991 initiated rulemaking proceedings on what would become the "PCB Mega Rule." EPA initiated this rulemaking for several reasons. First, EPA's knowledge about the sources, uses, risks, and disposal of PCBs had increased substantially in the years following promulgation of the first disposal regulations. 56 Fed. Reg. at 26,738 (June 10, 1991). Second, the regulated community and the public brought to EPA's attention a number of ways to streamline PCB regulations and to better protect human health and the environment from the risks associated with PCBs. 59 Fed. Reg. at 62,788 (Dec. 6, 1994). Third, fourteen years after the ban on manufacturing, over eight hundred thousand tons of PCBs were still being disposed of each

year in the United States. 61 Fed. Reg. at 11,096 (Mar. 18, 1996). EPA was particularly concerned about "large volume PCB wastes" from the shredding of automobiles, appliances, and the like and also PCB-contaminated soils and sediments. 59 Fed. Reg. at 62,791.

In June 1991, EPA published an Advance Notice of Proposed Rulemaking ("ANPR"), which sought comment on a number of sweeping changes to the PCB regulations. 56 Fed. Reg. at 26,738 (June 10, 1991). After receiving comments on the ANPR, EPA published a Notice of Proposed Rulemaking ("NPRM"), proposing amendments to, among other things, controls on the use and storage of PCB-containing electrical equipment and disposal and cleanup of PCBs. 59 Fed. Reg. at 62,788 (Dec. 6, 1994). EPA received over 200 comments on the NPRM and held a public hearing on the NPRM in June 1995.

In June 1998, approximately three-and-a-half years after the NPRM and seven years after the ANPR, EPA promulgated the final PCB Mega Rule ("Final Rule")(codified at 40 C.F.R. §§ 761.1 - .398), adopting significant amendments affecting the use, manufacture, processing, distribution in commerce, and disposal of PCBs. 63 Fed. Reg. at 35,384 (June 29, 1998).

Two sets of petitioners, USWAG and GE, challenge discrete aspects of the Final Rule, arguing essentially that the revisions do not go far enough in relaxing regulatory controls on PCB storage and disposal. In the third petition, Sierra Club argues that the

rule goes too far and thus allows unreasonably risky disposal practices. This Court has jurisdiction to review challenges to the Final Rule pursuant to Section 19(a) of TSCA, 15 U.S.C. § 2618(a), which grants interested parties the right to appeal directly a final rule promulgated under section 6(e) to this or any other regional circuit court of appeals. We consider each of the petitioners' arguments in turn.

II
Standard of Review

TSCA states that the Administrative Procedure Act's scope of review provision, 5 U.S.C. § 706, shall apply to review of rules under TSCA section 6(e) except that "the court shall hold unlawful and set aside such rule if the court finds that the rule is not supported by substantial evidence in the rulemaking record ... taken as a whole." TSCA § 19(c)(1)(B)(I); U.S.C. § 2618(c)(1)(B)(I)(emphasis added).

The substantial evidence standard requires reviewing courts "to ask whether a 'reasonable mind might accept' a particular evidentiary record as 'adequate to support a conclusion.'" Dickinson v. Zurko, 527 U.S. 150, 162, 119 S.Ct. 1816, 1823, 144 L.Ed.2d 143 (1999) (citations omitted). "Substantial evidence requires 'something less than the weight of the evidence, and the possibility of drawing two inconsistent conclusions from the evidence does not prevent an administrative agency's finding from being supported by substantial evidence.'" Corrosion Proof

Fittings v. EPA, 947 F.2d 1201, 1213 (5th Cir. 1991)(quoting Consolo v. Federal Maritime Comm'n, 383 U.S. 607, 620 (1966)). As this Court emphasized, "Congress put the substantial evidence test in the statute because it wanted the courts to scrutinize [EPA's] actions more closely than an arbitrary and capricious standard would allow." Id. at 1214.

Moreover, when EPA seeks to change its regulatory course, it bears the burden of producing evidence in the record supporting the change in its rules. Center for Science in the Public Interest v. Hodel, 797 F.2d 995, 999 (D.C. Cir. 1986)(citation omitted)(the agency bears "the burden ... to justify the change from the status quo ...."). And, "[i]t is axiomatic that an agency choosing to alter its regulatory course 'must supply a reasoned analysis indicating that its prior policies and standards are being deliberately changed, not casually ignored.'" Action for Children's Television v. F.C.C., 821 F.2d 741, 745 (D.C. Cir. 1987) (citations omitted); accord Acadian Gas Pipeline Sys. v. F.E.R.C., 878 F.2d 865, 870 (5th Cir. 1989); Action on Smoking and Health v. C.A.B., 699 F.2d 1209, 1216 (D.C. Cir. 1983) (agency rescinding rule must "explain why the old regulation is no longer desirable"). "When an agency acts to rescind a standard it previously adopted, a reviewing court will subject that rescission to the same level of scrutiny applicable to the agency's original promulgation." Association of Public-Safety Comm. Officials Int'l, Inc. v. F.C.C.,

76 F.3d 395, 398 (D.C. Cir. 1996)(citing Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co., 463 U.S. 29, 41 (1983))

The parties disagree as to how the substantial evidence standard applies to the rulemaking at issue. According to EPA, the unique feature of TSCA § 6(e), which generally prohibits the manufacture or use of PCBs unless EPA has authorized a use, reflects a legislative finding that PCBs pose an unreasonable risk of injury to health. Therefore, EPA argues, TSCA § 6(e) creates a rebuttable presumption that all uses of PCBs present an unreasonable risk of injury to health and the environment. Thus, according to EPA, if a petitioner, such as USWAG or GE, alleges that EPA unreasonably refused to allow a particular use of PCBs, EPA need not show by substantial evidence that petitioners' desired use poses an unreasonable risk to health or the environment. We agree.

When considered in the context of section 6(e), the review provision of TSCA § 19(c)(1)(B)(I) reflects Congress's intent that courts apply the higher substantial evidence standard of review only to those EPA decisions permitting the use of PCBs. Section 6(e) establishes a categorical ban on most uses of PCBs except as authorized by EPA. Although this section permits EPA to craft exceptions to this outright ban, it does not require the agency to do so. Section 19(c)(1)(B)(I), in turn, ensures that when EPA does exercise its discretion to create an exception, they do so only to

the extent supported by substantial evidence. Nothing in the statutory scheme suggests that EPA must support by substantial evidence either its decision not to act or its decision not to craft as large an exemption as petitioners would like. A petitioner may nevertheless challenge such a decision, or indecision as the case may be, but they must do so as most petitioners do in most informal rulemakings, by showing that the agency acted arbitrarily and capriciously. See 5 U.S.C. § 706(2)(A). To require a greater evidentiary showing by EPA would eviscerate the categorical ban of section 6(e) and would reverse the presumption against PCB use that the section imposes.

Petitioner, USWAG, contends that the D.C. Circuit in Environmental Defense Fund, Inc. v. EPA,("EDF") 636 F.2d 1267 (D.C. Cir. 1980), held that TSCA does not create a statutory presumption that the use of PCBs presents an unreasonable risk of injury to health or the environment. Petitioner's reliance on EDF is misplaced. In EDF, petitioners argued that TSCA prohibited EPA from permitting most uses of PCBs under any circumstance. 636 F.2d at 1275 n. 17. In effect, the petitioner argued that the statute created an unrebuttable presumption that PCBs pose an unreasonable risk to health and the environment and that, therefore, EPA could not authorize the use of PCBs. In rejecting this argument, the D.C. Circuit held that the statute does not create an unrebuttable presumption. Id. We agree with this conclusion and, as indicated

above, we conclude that the statutory language creates a rebuttable presumption that uses of PCBs pose an unreasonable risk to health and the environment.

Accordingly, we hold that the substantial evidence standard of review provided for under section 19(c)(1)(B)(I) applies only when a petitioner challenges EPA's decision to depart from the outright ban and permit the use or expand the use of PCBs. When a petitioner challenges an EPA rule restricting or prohibiting the use of PCBs, courts must review EPA's action under the arbitrary and capricious standard of review.

III
USWAG Petition

USWAG first challenges a provision of the preamble to the Final Rule that states that TSCA does not preempt state or local PCB cleanup, storage, and disposal regulations. USWAG also challenges the portion of EPA's Final Rule that imposes restrictions on the storage for reuse of PCB Articles, as well as the section of the Final Rule that creates a regulatory assumption for classifying "small transformers" as "PCB Transformers."

A
Federal Preemption

Section 18 of TSCA provides, in pertinent part, that:

> [e]xcept as provided in subsection (b) of this section ...
>
> ... if the Administrator prescribes a rule or order under section 2604 or 2605 [TSCA § 6] of

> this title (other than a rule imposing a requirement described in subsection (a)(6) of section 2605 of this title) [referred to as the 'Parenthetical Exception'] which is applicable to a chemical substance or mixture, and which is designed to protect the environment associated with such substance or mixture, no State or political subdivision of a State may, after the effective date of such requirement, establish or continue in effect, any requirement which is applicable to such substance or mixture ... unless such requirement (I) is identical to the requirement prescribed by the Administrator, (ii) is adopted under authority of the Clean Air Act or any Federal law, or (iii) prohibits the use of such substance or mixture in such State or political subdivision (other than its use in the manufacture or processing of other substances or mixtures).

TSCA § 18(a)(2)(B), 15 U.S.C. § 2617 (a)(2)(B) (emphasis added).

Thus, once EPA regulates a chemical substance under TSCA § 6, no State or local government may establish or continue to enforce any requirement applicable to such chemical unless: (1) the state requirement fits into one of section 18's three enumerated exceptions, or (2) the state requirement falls within the parenthetical exception to Section 18, which exempts rules imposing certain requirements described in TSCA.

USWAG is unhappy with EPA's declaration in the preamble to the Final Rule that "TSCA does not allow the Administrator to preempt State disposal rules which describe the manner or method of disposal of a chemical substance or mixture, or in this instance, the disposal of PCBs." 63 Fed. Reg. at 35,386. USWAG also

complains of several provisions of the Final Rule which explain that parties subject to the Final Rule must also comply with other "applicable" Federal, State, and local laws and regulations.[1]

USWAG argues that the portion of this legally-binding preamble[2] declining to preempt state rules governing the disposal of PCBs contravenes the express intent of Congress to establish a comprehensive and uniform federal PCB regulatory program. Additionally, USWAG argues that the preamble directly conflicts with this Court's controlling precedent in Rollins. 775 F.2d at 634 (holding that "Congress has explicitly mandated that [TSCA], and regulations promulgated under it by EPA, preempt state and local regulation of PCB disposal.")(emphasis in original). USWAG urges us to vacate EPA's interpretation that TSCA does not preempt

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[1] 40 C.F.R. § 761.50(a)(6) provides that "[a]ny person storing or disposing of PCBs is also responsible for determining and complying with all other applicable Federal, State, and local laws and regulations;" 40 C.F.R. § 761.72(c)(2), that provides "[s]crap metal recovery ovens and smelters disposing of PCBs must provide notification as disposers of PCBs, are not required to submit annual reports, and shall otherwise comply with all applicable provisions of subparts J and K of this part, as well as other applicable Federal, State, and local laws and regulations;" and 40 C.F.R. § 761.79(a)(6), "[a]ny person engaged in decontamination under this section is responsible for determining and complying with all other applicable Federal, State, and local laws and regulations."

[2] An EPA declaration contained in the preamble to a final rule setting forth the Agency's final and binding interpretation of the statute qualifies as a reviewable regulation for purposes of judicial review. Chemical Waste Management v. EPA, 869 F.2d 1526, 1533 (D.C. Cir. 1989) (holding that a regulatory interpretation in preamble to a final rule was ripe for review because EPA had arrived at its ultimate decision on the issue).

state and local regulations regarding the disposal of PCBs.

Before we can reach the merits of USWAG's claims, however, we must consider whether these claims are presently ripe for adjudication. See Ohio Forestry Ass'n, Inc., v. Sierra Club, 523 U.S. 726, 731, 118 S.Ct. 1665, 1670, 140 L.Ed.2d 921 (1998)(case must be ripe in order to be justiciable). The Supreme Court has explained that the essence of the ripeness doctrine is to:

> prevent the courts, through avoidance of premature adjudication, from entangling themselves in abstract disagreements over administrative policies, and also to protect the agencies from judicial interference until an administrative decision has been formalized and its effects felt in a concrete way by the challenging parties. The problem is best seen in a twofold aspect, requiring us to evaluate both the fitness of the issues for judicial decision and the hardship to the parties of withholding court consideration.

Abbott Laboratories v. Gardner, 387 U.S. 136, 148-49, 87 S.Ct. 1507, 1515, 18 L.Ed.2d 681 (1967). Typically, in the context of rulemaking, "we wait until a rule has been applied before granting review," however, "this prudential concern loses force . . . when the question presented is purely legal." American Forest & Paper Ass'n. v. EPA, 137 F.3d 291, 296-297 (5th Cir. 1998) (citing New Orleans Pub. Serv., Inc. v. Council of City of New Orleans, 833 F.2d 583, 587 (5th Cir. 1987)("NOPSI"). USWAG argues that their challenge involves a pure question of law that is ripe for consideration. This Court has held, however, that even where an issue presents purely legal questions, the plaintiff must show some

hardship in order to establish ripeness. See American Forest, 137 F.3d at 296 (holding that purely legal issue was ripe for review because injuries were not speculative and deferring review would impose an immediate, significant burden on the petitioner); Chevron U.S.A., Inc. v. Traillour Oil Co., 987 F.2d 1138, 1153-54 (5th Cir. 1993) (holding that purely legal issue of whether Rocky Mountain was liable to indemnify Chevron for any plug and abandon obligations was ripe because there was a substantial possibility that Chevron would be required to plug and abandon the wells); NOPSI, 833 F.2d at 588 (holding that plaintiffs' suit to enjoin city council from forcing plaintiffs to absorb the cost of a nuclear power plant was not ripe because city council had only announced an inquiry into the issue of who should pay for the power plant and that there was only a possibility of harm to plaintiffs).

In this case, USWAG has identified no State or local regulations that it contends TSCA should preempt. Nor has USWAG offered evidence that it will suffer hardship if we defer consideration of this issue. Based on this record, we conclude that any hardship that USWAG could suffer is conjectural and thus, the issue is not ripe for review.

B
Storage for Reuse

The Final Rule authorizes members of the regulated industry to

store PCB Articles[3] for reuse. 40 C.F.R. § 761.35. Under § 761.35, an owner/operator may store PCB Articles indefinitely in storage units constructed to contain spills or releases of PCBs. 40 C.F.R. § 761.35(c). PCBs may also be stored in any other area if the owner or operator of the PCB Article: (1) follows the use and marking requirements for PCB Articles; (2) maintains records indicating the date the PCB Article was removed from use, the projected location and anticipated use of the PCB Article, and, if applicable, the date the PCB Article is scheduled for repair; and (3) if the owner or operator wants to store the PCB Article for more than five years, he must receive written approval from EPA Regional Administrator for the region in which the PCB Article is stored. 40 C.F.R. §§ 761.35(a) and (b). These restrictions on storage for reuse affect utility companies because, as EPA stated in the NPRM:

> [transformers] can easily have an active service life of more than 40 years [and] disposing of this equipment prematurely based upon an arbitrary time limit would not be economically prudent nor serve any environmental goals. Placing such a piece of electrical equipment in storage for reuse to be used as a spare or in emergency situations is both prudent and economically sound.

59 Fed. Reg. at 62,822.

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[3] "PCB Article" means any manufactured article that contains PCBs or whose surface has been in direct contact with PCBs, such as capacitors, transformers, electric motors, pumps, and pipes. 40 C.F.R. § 761.3.

USWAG argues that EPA previously authorized storage for reuse in its 1982 Rulemaking and that Final Rule § 761.35 imposes new restrictions on the storage for reuse of PCB Articles. According to USWAG, we should vacate § 761.35 because EPA lacks substantial evidence in the record to support its restrictions on the storage for reuse of PCB Articles. In addition, USWAG argues, as an independent basis for vacating § 761.35, that EPA failed to respond to a multitude of comments requesting a national variance for electric utilities.

1
1982 Rulemaking

EPA authorized storage for reuse for certain PCB Articles in its 1982 Rulemaking.[4] EPA explains that by 1991 it became aware of risks posed by PCB Articles in storage for reuse that it did not anticipate when it promulgated the 1982 regulations. 56 Fed. Reg. at 26,742. According to EPA, it became aware that regulated entities were engaging in "sham storage," that is, storage of PCB Articles with no intent to reuse the Articles in order to circumvent stringent disposal requirements. Id. EPA further contends that it became aware of reports of electrical equipment "held 'in storage'" for prolonged periods of time and "abuses" of

[4] See 47 Fed. Reg. 37,342, 37344 (Aug. 25, 1982). See also id. at 37,357 (use conditions for PCB Transformers "in use or stored for reuse") (text of § 761.30(a)(1)(ii); id. at 37,358 (conditions for "use and storage for reuse" of electromagnets, switches, and voltage regulators)(text of § 761.30(h)(1)(I)).

the storage for reuse rules by "brokers, junk yards, [and] service shops." 56 Fed. Reg. at 26,742; 59 Fed. Reg. at 62,822.

In the instant rulemaking, EPA received a comment from the State of Connecticut's Department of Environmental Protection that warned "it is clear that ... some limitations must be imposed on the long-abused 'storage for reuse' status ...." State of Connecticut Comments, R.C1-249 at 3. The Department of Energy ("DOE") also submitted comments indicating the prevalence of abuse of storage for reuse. According to DOE:

> as EPA points out, often equipment stored for "reuse" in junkyards, service shops, brokers, etc. is in disrepair or is damaged. DOE agrees that these specific situations must be eliminated while still allowing legitimate storage for reuse to continue.

Comments of DOE, R.C1-147 at 77.

EPA argues that it imposed the § 761.35 requirements to curb such abuse of the previous "storage for reuse" rule. The record amply supports this decision to strengthen the "storage for reuse" regulations to prevent practices that pose an unreasonable risk to health and the environment. EPA's decision to change its previous storage for reuse authorization was neither arbitrary nor capricious.

2
Response to Comments

USWAG also argues that EPA failed to respond to industry comments requesting a national variance from compliance with this

rule for electric utilities. Section 553(c) of the APA requires an agency to "incorporate in the rules adopted a concise general statement of their basis and purpose." 5 U.S.C. § 553(c). The scope and degree of detail required by § 553(c) depends on the scope and detail provided in the comments. See Kenneth Culp Davis & Richard J. Pierce, Administrative Law Treatise § 7.4, at 312 (3d ed. 1994).

In the NPRM, EPA specifically requested comments from the regulated community on the appropriateness of a national variance from the proposed requirements of § 761.35.[5] USWAG argues that we must vacate the restrictions on storage for reuse because EPA failed to respond to fifteen comments specifically requesting a national variance from § 761.35 for electrical utilities.

EPA admits that it did not state explicitly why it declined to grant industry demands for a national exemption for the electric utility industry. However, EPA argues that after considering comments from a number of sources, it evaluated the risks, benefits and burdens associated with the storage for reuse of PCB Articles, and concluded that it could not give the electric utility industry a blanket exemption from § 761.35. EPA also argues that the storage for reuse requirements promulgated in the Final Rule are less rigorous than the storage for reuse requirements proposed in

[5] "EPA also requests comment on the inclusion of site-specific or nationwide exemption or waiver provisions ...." 59 Fed. Reg. at 62,822 (emphasis added).

the NPRM and that the Final Rule it adopted was EPA's comprehensive response to all the comments on storage for reuse, including the electric utilities' requests for a national variance. We conclude that EPA's rationale is insufficient.

EPA's specific request for comments on the appropriateness of a national variance and the numerous comments that EPA received on this request, required EPA to give reasons for declining to promulgate a national variance. But EPA's failure to explain why it did not adopt a national variance does not require vacatur. Courts have explained that "remand is generally appropriate when 'there is at least a serious possibility that the [agency] will be able to substantiate its decision' given an opportunity to do so, and when vacating would be 'disruptive.'" See Radio-Television News Directors Ass'n v. FCC, 184 F.3d 872, 888 (D.C. Cir. 1999)(quoting Allied-Signal, Inc. v. United States Nuclear Regulatory Comm'n, 988 F.2d 146, 151 (D.C. Cir. 1993). EPA may well be able to justify its decision to refuse to promulgate a national variance for the electric utilities and it would be disruptive to vacate a rule that applies to other members of the regulated community.[6] Accordingly,

[6] The Rule regulating storage for reuse applies to all members of the regulated community including junkyards, service shops, brokers, and electric utilities. EPA gave ample reasons for its application of the Rule to the members of the regulated community in general. It simply failed to explain why it refused to grant the national variance to the electric utilities. We conclude that it would be disruptive to vacate application of the Rule to other segments of the industry.

we remand, without vacatur, Final Rule § 761.35 for EPA to provide a reasoned statement of why it did not grant a national variance for the electric utility industry.

C
Small Transformers

Another issue that EPA considered in the rulemaking process was the adoption of assumptions for classifying transformers containing PCBs for the purpose of determining how those transformers should be regulated during the time they are in use. 63 Fed. Reg. at 35,436-37. These regulatory assumptions are critical because the applicable controls depend on what category of transformer is being regulated: transformers containing $500 ppm[7] PCBs are defined as "PCB Transformers" and are subject to the most stringent use controls (including labeling, inspections and registration requirements, as well as location restrictions); transformers containing $ 50 to < 500 ppm PCBs are defined as "PCB-contaminated Electrical Equipment" and are subject to less onerous use controls; and transformers containing < 50 ppm PCBs generally are not regulated for purposes of use. 40 C.F.R. §§ 761.3 and 761.30(a).

In NPRM EPA requested comment on how to classify, for purposes of the above regulatory assumptions, a particular category of transformers characterized as "small transformers":

> [t]he Agency is seeking information regarding

[7] ppm = parts per million.

> numbers of small transformers or other electrical equipment that contains PCBs .... Some examples of this type of equipment are: potential transformers, current transformers .... These small transformers can range in size from several inches to several feet in height .... Since these smaller transformers generally do not have a nameplate, under the proposed amendment to § 761.3 [the definition of "PCB Transformer"] they would have to be assumed to be PCB Transformers and would be subject to the [PCB Transformer] use requirements ... and the disposal requirements ....
>
> The Agency is also soliciting comments regarding the disposal requirements that could be imposed on these small transformers or other similar types of small electrical equipment.

59 Fed. Reg. at 62,820 (emphasis added).

In response to this request for information, USWAG and others submitted comments explaining why EPA should not include "small transformers" within the regulatory assumption rule for "PCB Transformers." In addition to providing EPA with information on the uses and manufacture of the various types of "small transformers," USWAG provided EPA with the results of an electric utility industry survey. This survey challenged EPA's factual basis for concluding that the millions of "small transformers" in use throughout the electric utility industry are "PCB Transformers" (i.e., contain $ 500 ppm PCBs). Only one percent (1%) of the small transformers evaluated in the survey were found to meet the definition of a "PCB Transformer." However, USWAG did not provide EPA with the data supporting the survey results and, therefore,

that data is not part of the rulemaking record.

On the basis of the survey results, USWAG urged EPA not to include “small transformers” within the regulatory assumption rule that would classify them as “PCB Transformers.” Instead, USWAG urged EPA to include “small transformers” within the regulatory assumption rule for PCB-Contaminated Electrical Equipment.[8] USWAG also requested that EPA regulate small transformers containing less than three pounds of fluid in the same manner as Small Capacitors (which are essentially viewed as non-PCB equipment) and that EPA view “dry-type” small transformers as non-PCB and thus exempt from PCB controls.

In the Final Rule, EPA concluded that the following transformers could be assumed to contain less than 50 ppm PCBs (and hence not subject to any PCB controls during use):(1) non-liquid filled transformers; (2) transformers containing less than 3 pounds of fluid; (3) transformers manufactured on or after July 2, 1979, the effective date of TSCA’s PCB ban; (4) certain mineral oil transformers of any volume; and (5) pad-mounted and pole-top

[8] The regulatory assumptions apply only to untested equipment. An owner of PCB-containing electrical equipment can establish the actual PCB concentration in the equipment, either through testing or the use of qualified documentation, and not rely on the regulatory assumptions. 63. Fed. Reg. at 35,389. However, as USWAG points out in their comments, most “small transformers” are hermetically sealed during manufacture, making testing impossible without destroying the integrity of the unit. Pet. Comments at 62. Hence, most owners/operators of “small transformers” must, as a practical matter, rely on the regulatory assumptions for purposes of classifying this equipment.

transformers. 40 C.F.R. §§ 761.2(a)(1)-(4). However, the rule assumes that "small transformers" and other transformers that meet the § 761.2(a)(3) criteria,[9] are "PCB Transformers." In support of this conclusion, EPA reasoned that it is exceedingly difficult to determine the contents and date of manufacture of these small transformers.

USWAG argues that neither EPA's Final Rule nor its Response to Comments discusses or challenges the validity of the survey results supplied by USWAG or the data in other comments demonstrating that less than 1% of "small transformers" contain > 500 ppm PCBs.

EPA argues that as a result of comments by USWAG and others it modified the proposed assumption extensively to reflect these comments. EPA argues that it did not further modify the assumption because, when taken together, EPA's evidence of the dangers that PCBs pose, the large number of PCB Transformers manufactured that contain high levels of PCBs, and the improper practices of some

[9] Section 761.2(a)(3) provides that:

> [a]ny person must assume that a transformer manufactured prior to July 2, 1979, that contains ... 3 pounds ... or more of fluid other than mineral oil and whose PCB concentration is not established, is a PCB Transformer (i.e., > 500 ppm). If the date of manufacture and the type of dielectric fluid is unknown, any person must assume the transformer to be a PCB Transformer.

transformer owners[10] and operators support the promulgation of the assumption rule.

We conclude that EPA's decision not to exclude the transformers identified by USWAG in its survey from the assumption rule was not arbitrary and capricious. USWAG did not introduce into the record the data supporting its survey and there was no other evidence in the record that could support a conclusion that the types of small transformers surveyed by USWAG should not be classified as PCB Transformers.

IV
GE Petition

GE argues that EPA, in promulgating the Final Rule, overestimated the carcinogenicity of PCBs. GE also challenges the Final Rule's provisions regarding the decontamination of painted metal surfaces and concrete.

A
PCB Risk Assumption

The TSCA requires that any EPA rule concerning PCBs must not cause an "unreasonable risk of injury to health or the environment." 15 U.S.C. § 2605(e)(1)(A), (2)(B). Pursuant to this requirement, the Final Rule establishes new PCB remediation and

[10] According to EPA, it uncovered evidence that some transformer owners removed the manufacturer's nameplate, which generally provides the only evidence of the level of PCBs in the transformer, from PCB transformers to avoid properly disposing them. 56 Fed. Reg. at 26,741.

decontamination options based on: (1) EPA's estimate of the toxicity of PCBs; and (2) EPA's estimate of the frequency, duration and extent of human exposure to PCBs. See 63 Fed. Reg. 35,384, 35,385; U.S. E.P.A., Assessment of Risks Associated with the PCB Disposal Amendments (Versa, May 11, 1998). To define the toxicity of PCBs, EPA used a numerical estimate of the cancer potency of PCBs (often called "cancer potency factor" or "C.F.") of 4.0 $(mg/kg/day)^{-1}$.[11] 63 Fed. Reg. at 35,386.

GE argues that in setting the risk-based standards, EPA overestimated the health risk posed by PCBs. According to GE, the record does not support EPA's use of the C.F. of 4.0 $(mg/kg/day)^{-1}$, and contends that the appropriate C.F. for PCBs is less than 2.0 $(mg/kg/day)^{-1}$.

EPA counters that TSCA permits it to consider other factors such as unknown threats to human health or the environment. According to EPA, it raised the C.F. from the range of 0.1 to 2.0 $(mg/kg/day)^{-1}$ to 4.0 $(mg/kg/day)^{-1}$ in order to protect against non-

[11] To assess the risk of acquiring cancer (as opposed to a non-cancer health effect) from exposure to a substance, EPA uses a risk assessment method based on a non-linear model. The C.F. expresses the carcinogenic potential of the substance in question; the higher the value, the more likely the substance is to cause cancer at any particular dose level. When EPA published the PCB Spill Cleanup Policy, 52 Fed. Reg. 10,688, 10,696 (Apr. 2, 1987), the agency used a C.F. of 4.0 $(mg/kg/day)^{-1}$ to develop the risk-based standards which formed the basis of the Proposed Rule. EPA subsequently issued a new assessment of the cancer risk from exposure to PCBs that indicated that the upper bound C.F. that would be appropriate for assessing cancer risk from PCBs was 2.0 $(mg/kg/day)^{-1}$. 1996 Reassessment.

cancer and environmental risks. In its Response to Comments, EPA states that:

> [while the 4.0 $(mg/kg/day)^{-1}$ slope factor does not correspond with any of the cancer slope factors in the September 1996 report [the Reassessment], it does allow for additional protection from as yet unquantified risks from non-cancer human health effects and effects to the environment.

U.S. E.P.A., Response to Comments Document on the Proposed Rule – Disposal of Polychlorinated Biphenyls (May 1998).

EPA is in the process of conducting a comprehensive assessment of the non-cancer toxic effects of PCBs.[12] According to EPA, it promulgated the Final Rule before the assessment was completed, in order to comply with the desires of the regulated community to finalize the rulemaking as soon as possible. However, EPA states that it has already committed to reexamine the toxicity of PCBs and has no objection to a remand so that it can consider the results of the assessment. Therefore, we remand §§ 761.61(a) and 761.79(b) to give EPA an opportunity to complete its assessment and reconsider the Final Rule in light of its study.[13]

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[12] According to EPA the assessment of the health effects of PCBs will be completed by fiscal year 2000 or 2001. 65 Fed. Reg. 1863.

[13] GE further argues that, as a condition on the remand, we should direct that the remand be completed and a new rule be promulgated within three years of the mandate issuing in this case. See Florida Power & Light Co. v. Costle, 650 F.2d 579, 590 (5th Cir. 1981)(holding that "[i]n hearing a petition for review, a court of appeals may exercise equitable powers in its choice of remedy, as long as the court remains within the bounds of statute

B
Decontamination of PCB-Contaminated Equipment and Structures for Distribution or Use in Commerce

The Final Rule prohibits the distribution in commerce of any equipment or structures that have been contaminated with PCBs in excess of 50 ppm. 40 C.F.R. § 761.20(c)(5). The Final Rule also prohibits the use of equipment or structures that have been contaminated with PCBs in excess of 50 ppm. 40 C.F.R. § 761.30(u). The rule provides a single exception to these prohibitions where the equipment or structures have been decontaminated in accordance with Final Rule § 761.79. GE contends that we should vacate the Final Rule's stringent procedures for decontaminating equipment and structures contaminated by PCBs because they are not supported by substantial evidence in the record and because EPA failed to abide by the notice and comment requirements.

1
Decontamination of Painted Surfaces

The Final Rule states that painted metal surfaces

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and does not intrude into the administrative province."). GE does not cite any cases in which a court, through an exercise of its equitable powers, imposed such a time limit on remand. Although we recognize that the PCB Mega-Rulemaking was an arduous seven-year affair and that GE will not obtain full relief until EPA completes further rulemaking on the cancer risk presented by PCBs, we decline to impose particular time limits in this area of activity within the province of the Executive Branch. If, following the remand, GE believes that EPA is unduly delaying the promulgation of a new rule, it may seek a writ of mandamus compelling EPA to expedite its rulemaking.

contaminated by spills $ 50 ppm are considered to be "decontaminated" if the paint is removed to Visual Standard No.2, Near-White Blast Cleaned Surface Finish, of the National Association of Corrosion Engineers ("NACE").[14] 40 C.F.R. § 761.79(b)(3)(I)(B). GE argues that EPA, in enacting this provision, violated the notice and comment requirements of the APA by failing to mention the NACE standard in any preamble or proposed regulatory language, which had the effect of preventing potential comment on that standard.

a
Notice and Comment

The record reflects that despite GE's protestations to the contrary, it had ample opportunity to comment on the requirements for decontaminating porous surfaces. GE submitted two sets of comments calling for EPA to allow the decontamination of porous surfaces and offering suggestions for methods of decontamination. Its suggestions included blasting, scarification, and removal with solvents and abrasives, GE Comments, C1-242, at 77-80, and C1-303, at 20. These and other comments demonstrate that GE knew that EPA was likely to consider a wide range of decontamination options for porous surfaces. Because GE had knowledge of the problem EPA was attempting to solve and had full opportunity to comment on the

[14] The NACE standard is a "Visual Standard for Surfaces of New Steel Centrifugally Blast Cleaned with Steel Grit and Shot."

solution to the problem, GE fails to expose any violation of EPA's notice and comment requirements.

b
Arbitrary and Capricious

GE argues that Final Rule § 761.79(b)(3)(I)(B) is not supported by substantial evidence because: (1) there is no substantial evidence showing that EPA should require paint removal for decontamination, and (2) while the NACE standard adopted by EPA is tailored to a specific cleaning technology, no evidence in the record suggests that the cleaning methods authorized by EPA can be used to satisfy NACE.

According to GE, EPA's PCB Spill Policy ("Spill Policy") previously defined painted surfaces as "impervious," and allowed contaminated paint to be decontaminated by surface wiping.[15] 52 Fed. Reg. 10,705 (Apr. 2, 1987). GE contends there is no evidence in the record to support EPA's recent classification of painted metal surfaces as "porous," and requiring complete removal of contaminated paint. However, there is no evidence in the record that suggests that paint is not porous to spills of liquid PCBs and EPA provides a sensible explanation for the rule change.[16] As

[15] Under the PCB Spill Policy recently discovered contaminated painted surfaces could be decontaminated by wiping the paint so that the surface contamination was less than 10 µg/100 cm^2.

[16] EPA argues that the Spill Policy was badly phrased in that it allowed the industry to use the wipe test on old spills that were recently discovered. EPA was persuaded that in these situations the wipe test was inadequate to remove PCBs after they

such, we reject GE's argument that the painted metal surface provision of § 761.79(b)(3)(I)(B) must be vacated because EPA's requirement that PCB contaminated paint be removed is not arbitrary and capricious.

According to GE, compliance with the visual NACE standard cannot be achieved by using the cleaning methods authorized by EPA in the Final Rule. See 40 C.F.R. § 761.79(b) (authorizing *inter alia* chopping, scraping, scarification, or the use of abrasives or solvents). GE argues that the Final Rule effectively requires it to blast its contaminated equipment with grit/steel shot which will either destroy or severely diminish the economic value of the machines and eliminate the option of distributing the equipment in commerce for continued use.

Contrary to GE's assertion, EPA does not interpret the rule in a manner that would require GE to use grit/steel shot cleaning methods. Rather, as EPA explains, parties can meet the standard by using the cleaning methods authorized in the Final Rule so long as the metal surface is left free of foreign matter except for light shadows or streaks. Because the Final Rule does not require paint to be removed by blasting the contaminated surface with grit/steel shot, we conclude that it is not arbitrary and capricious.

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had penetrated the paint.

Concrete

The Final Rule allows an owner to use, but not distribute in commerce, concrete on which PCBs $ 50 ppm have been spilled. But this use is subject to a number of conditions.[17] First, the owner must clean accessible surfaces. 40 C.F.R. § 761.30(p)(ii). After cleaning, the owner must then coat the surfaces and place signs warning of the presence of PCBs. 40 C.F.R. § 761.30(p)(iii)(A), (B). These post-cleaning conditions apply regardless of the residual level of PCB contamination in or on the concrete. For example, if concrete is cleaned to a level below the 10 µg/100 cm^2, the owner must still coat the concrete and mark it as PCB-contaminated.

GE argues that Final Rule § 761.30(p)(1)(iii) requires regulated entities to coat and mark concrete to a level below that which EPA has agreed does not pose a substantial risk of injury. Consequently, GE contends the record does not support such stringent cleaning requirements. GE also argues that this cleaning requirement contradicts EPA's long-standing Spill Policy, which does not impose such requirements if concrete is cleaned to the 10 µg/100 cm^2 level.

EPA counters that the 10 µg/100 cm^2 requirement measures only the surface concentration of PCBs; not the amount of PCBs that

[17] If the cleanup begins within 72 hours of the spill and the 10 µg/100 cm^2 level is reached, then the concrete can be used without restrictions. 40 C.F.R. § 761.30(u).

have soaked into a porous material. Surface cleaning of porous surfaces such as concrete will not clean up PCB spills that have soaked into the concrete. Therefore, as explained in the Final Rule, EPA requires that parties not only clean the spill area's surface, but also coat and mark it in order to warn of possible deeper PCB contamination in the material. 63 Fed. Reg. at 35,398 ("EPA believes that the use conditions specified in § 761.30(p) will effectively prevent exposure to any residual PCBs in the contaminated porous material and therefore continued use of this material will not present an unreasonable risk.").

The record shows without contradiction that the decontamination of concrete poses particular challenges because of its porousness. Moreover, several commentors, including GE, commented that encapsulation (i.e. covering contaminated concrete with fresh concrete and/or a sealant) is a feasible means of preventing "wicking back" of PCBs to the surface. GE Comments, R.C1-034, at 31; American Electric Power Comments, C1-029, at 15; Tenneco Gas Comments, C1-154, at 63. Our review of the record leads us to conclude that EPA's cleaning, painting and marking requirements are not arbitrary and capricious.

V
Sierra Club Petition

In its petition, Sierra Club challenges EPA's promulgation of

several sections of the Final Rule relating to the disposal of PCB bulk product waste.[18] Specifically, Sierra Club argues that: (1) EPA failed to provide notice and an opportunity for comment on Final Rule § 761.62(d), which permits the disposal of "PCB bulk product waste" as daily landfill cover and under asphalt road beds; (2) EPA failed to provide notice and an opportunity for comment on Final Rule § 761.62(b), which allows disposal of PCB bulk product waste in ordinary landfills regardless of the PCB concentration in the waste; (3) that Final Rule § 761.62(b)(1)(I)'s assumption that PCB bulk waste product does not leach is not supported by substantial evidence; (4) that Final Rule § 761.62(b)(1)(ii)'s adoption of a water-based leachability test is not supported by substantial evidence. Essentially, Sierra Club challenges the Final Rule's assumption that PCB bulk product waste does not leach PCBs and, accordingly, it is permissible to allow the disposal of PCB bulk product waste in

[18] PCB bulk product waste includes:

> [p]lastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes or other similar coatings or sealants; caulking; Galbestos; non-liquid building demolition debris; or non-liquid PCB bulk product waste from the shredding of automobiles or household appliances from which PCB small capacitors have been removed (shredder fluff).

Final Rule § 761.62(b)(1)(I).

landfills and under asphalt as roadbed. Before we can reach the merits of Sierra Club's petition, however, we must consider whether it has standing.

An association has standing to bring a suit on behalf of its members when: (1) its members would otherwise have standing to sue in their own right; (2) the interests it seeks to protect are germane to the organization's purpose; and (3) neither the claim asserted nor the relief requested requires the participation of individual members. Hunt v. Washington State Apple Advertising Com'n, 432 U.S. 333, 343, 97 S.Ct. 2434, 2441, 53 L.Ed.2d 383 (1977); Texans United For a Safe Economy Educ. Fund v. Crown Cent. Petroleum Corp., 207 F.3d 789, 792 (5th Cir, 2000). The individual plaintiffs can satisfy their "irreducible constitutional minimum" of standing by demonstrating that: (1) they have suffered an actual or threatened injury; (2) the injury is "fairly traceable" to the defendant's action; and (3) the injury will likely be redressed if the plaintiffs prevail in the lawsuit. Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-61, 112 S.Ct. 2130, 2136, 119 L.Ed.2d 351 (1992); Texans United, 207 F.3d at 792.

Sierra Club's challenge to EPA's rulemaking centers around the TSCA's procedural requirements that EPA provide notice and an opportunity to comment on proposed rules. Such a challenge to EPA's purported failure to abide by a procedural requirement in

rulemaking is analyzed under the somewhat more lenient requirements of standing for procedural rights cases. See Florida Audubon Soc. v. Bentsen, 94 F.3d 658, 664-65 (holding that petitioners' standing in challenging IRS's rulemaking, in which IRS promulgated a tax credit for gasoline additives without preparing an environmental impact, is determined in accordance with "procedural-rights" line of cases deriving from Lujan). In Sierra Club v. Glickman, 156 F.3d 606 (5th Cir. 1998), we outlined the standing requirements for a plaintiff seeking redress for violations of procedural rights:

> in a procedural rights case ... a plaintiff is not held to the normal standards for redressibility and immediacy. This does not mean, however, that a procedural rights plaintiff has standing merely because of the government's failure to comply with the relevant procedural requirements. Instead, the plaintiff must show an injury that is both concrete and particular, as opposed to an undifferentiated interest in the proper application of the law.

Id. at 613.

Sierra Club argues that EPA's failure both to provide notice and comment in the promulgation of Final Rule §§ 761.62(b) and (d) and to support Final Rule §§ 761.62(b)(1)(I) and (ii) with substantial evidence will result in injury to the health, environmental and recreational interests of Sierra Club members. According to Sierra Club, the Final Rule creates a risk that PCBs will leach from bulk product wastes in either landfills or

roadbeds and contaminate water supplies. Sierra Club further contends that the use of PCB bulk product waste as daily landfill cover will result in a contamination of the ambient air with PCBs. To establish this injury in fact, Sierra Club relies on the affidavits of two Sierra Club Members, Dr. Neil Carman (" Dr. Carman") and Martha Sinclair ("Sinclair") (collectively "Affiants").

In his affidavit, Dr. Carman claims that he will sustain injuries because the Final Rule allows the disposal of PCB bulk product waste as landfill and as roadbed. Dr. Carman states that "the landfill used by [his] town does not have an impermeable underlayer to prevent the migration of contaminants offsite." Thus, the practices of disposing of PCB bulk product waste and using PCB bulk product waste as daily cover pose "a significant risk of PCB contamination to [his] neighborhood and his town's water supply." Dr. Carman also expressed a concern that:

> if PCB contaminated road bed material was used in the reconstruction of Routes 71 and 290 West as well as south MOPAC, those roads cross over the Edwards aquifer that in turn supplies drinking water to the City of Austin through significant flows into the Colorado River. I and my family also frequently swim at the Barton Springs pool that is fed directly by this aquifer. Because the asphalt road cover on our roads regularly allows water to enter the underlying road bed material through cracks, heaves and the many, omnipresent potholes, PCBs could leach from the roadbed material into Barton Springs and the City of Austin's water supply.

In her affidavit, Sinclair states, that she regularly travels on roads that are subject to being repaired or replaced with asphalt. According to Sinclair:

> I ... would be at risk for exposure to PCBs released into the air if PCB waste is transported to road construction areas, and stored at road construction areas in heaps or in trucks. I am also at risk in breathing dust released during road construction. PCB contaminants could also enter the waters I use for recreation and drinking when washed during rainfall and flood events from road construction sites to the Ohio River and other surface waters. The Ohio River serves as a drinking water source and a fisheries providing additional routes of PCB exposure for Ohioans including me.

She also contends that disposal of PCB bulk wastes in landfills poses a potential risk to landfill workers and contractors. However, a party may not base its Article III standing on alleged injuries to others. Friends of the Earth, Inc. v. Laidlaw Environmental Services (TOC), Inc., --- U.S. ----, 120 S.Ct. 693, 704, 145 L.Ed.2d 610 (2000); Lujan 504 U.S. at 578, 112 S.Ct. at 2146. Accordingly, we consider only Carman and Sinclair's claims of injury to themselves.

A
Leach from Landfill

Under the Final Rule, PCB bulk product waste is presumed to leach at levels less than the PCB leachate limit of 10 µg/liter.[19] Thus, PCB bulk product waste may be disposed of irrespective of

[19] 10 µg/Liter = 10 micrograms per Liter.

its actual concentration of PCBs.

Sierra Club argues that the leach test, used by EPA to determine that PCB bulk product waste leaches under the 10 µg/liter limit, is flawed because it does not properly simulate conditions that contain organic solvents, such as toluene and acetone. According to Sierra Club, these organic solvents cause PCB bulk product waste to leach at levels higher than 10 µg/liter. Therefore, Sierra Club argues that PCB bulk product waste disposed of in landfills will leach into the ground below landfills, at levels significantly higher than 10 µg/Liter and contaminate the environment.

Dr. Carman alleges that PCB bulk product waste disposed of in his town's landfill may leach from the landfill and somehow enter the town's water supply. But Carman presents no facts to support this concern. He produced no facts establishing the relative location of the landfill and the aquifer so that it is purely conjectual that PCB's could leach from the landfill and contaminate his town's water supply. This subjective concern, therefore, cannot serve as the basis for Sierra Club's standing. As the Supreme Court has explained, "[s]tanding is not an ingenious academic exercise in the conceivable, but as we have said requires, at the summary judgment stage, a factual showing of perceptible harm." Lujan, 504 U.S. at 556, 112 S.Ct. at 2139.

This court and the Supreme Court have consistently held that,

in order to establish Article III standing, petitioner must "have a direct stake in the outcome." See Sierra Club v. Cedar Point Oil Company, Inc., 73 F.3d 546, 555-56 (5th Cir. 1996); see also Friends of the Earth, 120 S.Ct. at 705. Moreover, "[i]t is the reality of the threat of [impending] injury that is relevant to the standing inquiry, not the plaintiff's subjective apprehensions.") Los Angeles v. Lyons, 461 U.S. 95, 107, n.8, 103 S.Ct. 1660, 1668, 75 L.Ed.2d 675 (1983). In Friends of the Earth, for example, petitioner sued Laidlaw under the Clean Water Act for discharging pollutants into a river in excess of permit limits. --- U.S. ----, 120 S.Ct. at 702. Petitioner's members testified *inter alia* that they had used the river for recreational activities in the past and that, but for Laidlaw's discharge of pollutants, they would continue to use the river. Id. at 704-05. The Supreme Court held that petitioner had stated an injury in fact because "the affidavits and testimony presented by FOE in this case assert that Laidlaw's discharges, and the affiant members' reasonable concerns about the effects of those discharges, directly affected those affiants' recreational, aesthetic, and economic interests." Id. at 705 (emphasis added). Similarly, in Cedar Point Oil, 73 F.3d at 546, this court held that Sierra Club had established an injury in fact where its members testified that Cedar Point's discharge of pollutants into Galveston Bay would directly impair their enjoyment of

recreational activities on the Bay. Id. at 555-56.

Unlike the petitioners in Friends of the Earth and Cedar Point Oil, Dr. Carman fails to establish any direct harm. While the petitioners in Friends of the Earth and Cedar Point Oil presented uncontroverted evidence that the pollutants they were challenging had entered the waterways that they enjoyed, Carman has not established the possibility that PCB bulk product wastes disposed of in his town's landfill could contaminate the aquifer that supplies his drinking water. As such, Dr. Carman has not identified a concrete injury sufficient to confer Article III standing. See Lujan, 504 U.S. at 566, 112 S.Ct. at 2139 ("standing ... requires, at the summary judgment stage, a factual showing of perceptible harm.").

B
Roadbed

Sierra Club's challenge to provisions in the Final Rule that allow disposal of PCB bulk product waste as roadbed material rests primarily on concerns that PCBs will leach from PCB bulk product waste disposed of in landfills. Again, Sierra Club has failed to produce facts that establish the requisite injury in fact.

Dr. Carman's theory of injury is predicated upon the occurrence of a string of future hypotheticals -– that road construction will occur in proximity to the Edwards aquifer, that the construction crews will use PCB bulk product waste in the

roadbed, that PCBs will leach from the roadbed, and that those PCB's will leach and contaminate aquifers or waterways. Nothing in the Carman and Sinclair affidavits suggest that any of these predicate events are likely to occur.

Even if we assume that road construction will occur over the Edwards aquifer, nothing in Dr. Carman's affidavit suggests that the construction crews will likely use PCB Bulk Product Waste as road bed for those particular roads. Moreover, Sierra Club has failed to establish any likelihood that, when used as roadbed, PCB Bulk Product Waste will leach PCBs. Sierra Club does not assert that PCB bulk product waste disposed of as roadbed will come into contact with organic solvents, which trigger the leaching of PCB's to harmful levels. Thus, Sierra Club has presented no evidence that supports an inference that such PCB bulk product waste will leach harmful PCBs. Finally, Sierra Club has failed to present any affidavits or other evidence explaining how PCBs, once leached from roadbeds, could migrate into aquifers and waterways.

Unlike the petitioners in Friends of the Earth and Cedar Point Oil, petitioners in this case cannot show that they are likely to suffer any direct and concrete injury as a result of the PCB Mega Rule. As we have explained, the requirement that a party demonstrate a direct and concrete injury in fact "is designed to limit access to the courts to those who have a direct stake in the outcome, as opposed to those who would convert the judicial

process into no more than a vehicle for the value interests of concerned bystanders." Cedar Point Oil, 73 F.3d at 546 (internal citations and quotations omitted). Dr. Carman's subjective fears and speculative string of events cannot possibly serve as the basis for standing. See Los Angeles v. Lyons, 461 U.S. at 107, n.8, 103 S.Ct. at 1668 ("[i]t is the reality of the threat of repeated injury that is relevant to the standing inquiry, not the plaintiff's subjective apprehensions.") see also Glickman, 156 F.3d at 613 (injury must be concrete and particular); cf. Texas v. United States, 523 U.S. 296, 300 118 S.Ct. 1257, 1259-60, 140 L.Ed.2d 406 (1998)(holding, under closely related ripeness doctrine, that Texas had not presented a justiciable claim because the proposed harm depended on the occurrence of numerous uncertain future events).

C
Airborne

Sinclair hypothesizes that she will be injured by airborne, dust-centered PCBs that will be released into the environment during road construction. However, no evidence in the record, except Sinclair's subjective statement of belief, supports the conclusion that PCB bulk product wastes generate PCB-laden dust. There is also no evidence indicating that Sinclair uses or will be using a road that is built on roadbed containing PCB bulk product waste. Therefore, Sinclair has failed to establish that, as a

result of EPA's alleged failure to adhere to the notice and comment requirements, she suffers or is likely to suffer an injury in fact.

D

We conclude that Sierra Club has failed to demonstrate an injury in fact sufficient to confer Article III standing. The Affiants simply do not allege concrete injuries or threats of injury to their recreational, aesthetic, or economic interests. Friends of the Earth, --- U.S. ----, 120 S.Ct. at 705. The affidavits do not demonstrate that Sinclair and Carman are threatened with injury from PCB's to any greater extent than any other person in the United States who drives on the country's roadways and drinks water in a town that has landfills. Thus, Sierra Club has failed to allege that EPA's promulgation of Final Rules §§ 761.62(b) and (d) will result in any tangible injury to any of its members. Accordingly, we are without authority to consider Sierra Club's petition.

VI

For the reasons stated above, we DISMISS USWAG and GE's petitions for review of EPA's PCB Mega-Rulemaking except for USWAG's challenge to Final Rule § 761.35 and GE's challenge to EPA's estimate of the toxicity of PCBs in §§ 761.61(a) and 761.67(b). We REMAND § 761.35 to EPA in order to allow EPA to

fully respond to comments and to explain why it did not grant a national variance for electric utilities. We REMAND §§ 761.61(a) and 761.79(b) to EPA so that it can complete its ongoing assessment of the non-cancer health effects of PCBs and reconsider the rule in light of this study. Because Sierra Club, through its members, has no standing to challenge the Final Rule we also DISMISS its petition for lack of jurisdiction.