

In the  
**United States Court of Appeals**  
**For the Seventh Circuit**

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No. 06-3907

SIERRA CLUB, *et al.*,

*Petitioners,*

*v.*

U.S. ENVIRONMENTAL PROTECTION AGENCY,

*Respondent,*

and

PRAIRIE STATE GENERATING COMPANY, LLC,

*Intervenor-Respondent.*

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Petition to Review an Order of the  
Environmental Appeals Board of the  
U.S. Environmental Protection Agency.  
No. 03-05

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ARGUED MAY 31, 2007—DECIDED AUGUST 24, 2007

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Before POSNER, KANNE, and WILLIAMS, *Circuit Judges*.

POSNER, *Circuit Judge*. The federal Environmental Protection Agency (actually, Illinois's counterpart to the EPA, exercising authority that the federal EPA had delegated to it, but we can ignore that detail) issued a permit

to Prairie State Generating Company to build a 1,500-megawatt coal-fired electrical generating plant in southern Illinois, near St. Louis. Environmentalists asked the EPA's Environmental Appeals Board to reverse the issuance of the permit, and, the Board having refused, *In re Prairie State Generating Co.*, No. 05-05 (EAB Aug. 24, 2006), they renew the quarrel in this court. They claim that the EPA violated two provisions of the Clean Air Act. One requires as a condition of receiving a permit that a plant or other source of air pollution be designed to have the "best available control technology" for minimizing pollution emitted by the plant. 42 U.S.C. § 7475(a)(4). The other attaches the further condition that the plant's emissions not exceed the limits imposed by the Act's national ambient air quality standards. § 7475(a)(3). The petitioners' first claim relates to the sulfur dioxide that will be produced as a byproduct of the production of electricity by Prairie State's plant, the second to the ozone that it will produce.

The plant is to be what is called a "mine-mouth" plant because it has been sited at the location of a coal seam. The seam is believed to contain 240 million tons of recoverable coal—enough to supply the plant's fuel needs for 30 years. The siting of the plant will enable the coal to be brought by a conveyor belt, more than half a mile long, from the mine to the plant. Unfortunately, this coal has a high sulfur content. To burn low-sulfur coal Prairie State would have to arrange for it to be transported from mines more than a thousand miles away and would have to make changes in the design of the plant—specifically, the design of the plant's facilities for receiving coal. The petitioners argue that the EPA must decide whether hauling low-sulfur coal from afar would be the best available means of controlling air pollution from the plant.

The Clean Air Act defines “best available control technology” as the “emission limitation” achievable by “application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment of innovative fuel combustion techniques.” 42 U.S.C. § 7479(3). A “proposed facility” that would if built be a “major emitting facility,” as the proposed Prairie State plant would be, must have “the best available control technology for each pollutant subject to regulation,” § 7475(4), including sulfur dioxide. The EPA’s position is that “best available control technology” does not include redesigning the plant proposed by the permit applicant (“traditionally, EPA does not require a . . . [permit] applicant to change the fundamental scope of its project,” *In re Old Dominion Electric Cooperative*, 3 E.A.D. 779, 793 n. 38 (EPA Adm’r 1992); Environmental Protection Agency, “New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Permitting” B.13 (Draft, Oct. 1990)), unless the applicant intentionally designs the plant in a way calculated to make measures for limiting the emission of pollutants ineffectual. *In re Prairie State Generating Co.*, *supra*, slip op. at 30, 33-34. But that is not contended in this case. Another provision of the Act, distinct from the one requiring adoption of the best available control technology, directs the EPA to consider “alternatives” suggested by interested persons (such as the Sierra Club) to a proposed facility. 42 U.S.C. § 7475(a)(2); see, e.g., *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 583 (EAB 1998). But that provision has not been invoked by the petitioners. Only compliance with the “BACT” (best available control technology) requirement is in issue.

The Act is explicit that “clean fuels” is one of the control methods that the EPA has to consider. Well, nuclear

fuel is clean, and so the implication, one might think, is that the agency could order Prairie State to redesign its plant as a nuclear plant rather than a coal-fired one, or could order it to explore the possibility of damming the Mississippi to generate hydroelectric power, or to replace coal-fired boilers with wind turbines. That approach would invite a litigation strategy that would make seeking a permit for a new power plant a Sisyphean labor, for there would always be one more option to consider. The petitioners to their credit shy away from embracing the extreme implications of such a strategy, which would stretch the term “control technology” beyond the breaking point and collide with the “alternatives” provision of the statute. But they do not suggest another stopping point.

Now it is true that a difference between this case and our nuclear hypothetical is that a plant designed to burn coal cannot run on nuclear fuel without being redesigned from the ground up, whereas Prairie State’s proposed plant could burn coal transported to the plant from afar. But to convert the design from that of a mine-mouth plant to one that burned coal obtained from a distance would require that the plant undergo significant modifications—concretely, the half-mile-long conveyor belt, and its interface with the mine and the plant, would be superfluous and instead there would have to be a rail spur and facilities for unloading coal from rail cars and feeding it into the plant. See Kathryn Heidrich, “Mine-Mouth Power Plants: Convenient Coal Not Always a Simple Solution,” *Coal Age*, June 2003, pp. 28, 30; Richard H. McCartney, “Bringing Coal Yards Into the 21st Century,” *Power Engineering*, July 2005, p. 36.

So it is no surprise that the EPA, consistent with our nuclear hypothetical and the petitioners’ concession

regarding it, distinguishes between “control technology” as a means of reducing emissions from a power plant or other source of pollution and redesigning the “proposed facility” (the plant or other source)—changing its “fundamental scope.” The agency consigns the latter possibility to the “alternatives” section of the Clean Air Act, which as we said is not involved in this case. Refining the statutory definition of “control technology”—“production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment of innovative fuel combustion techniques”—to exclude redesign is the kind of judgment by an administrative agency to which a reviewing court should defer. *Environmental Defense v. Duke Energy Corp.*, 127 S. Ct. 1423, 1434 (2007); *New York v. EPA*, 413 F.3d 3, 19-20 (D.C. Cir. 2005); *Alabama Power Co. v. Costle*, 636 F.2d 323, 397-98 (D.C. Cir. 1979).

But this opens the further and crucial question where control technology ends and a redesign of the “proposed facility” begins. As it is not obvious where to draw that line either, it makes sense to let the EPA, the author of the underlying distinction, draw it, within reason.

Suppose this were not to be a mine-mouth plant but Prairie State had a contract to buy high-sulfur coal from a remote mine yet could burn low-sulfur coal as the fuel source instead. Some adjustment in the design of the plant would be necessary in order to change the fuel source from high-sulfur to low-sulfur coal, Brian Schimmoller, “Western Coal Pushes East,” *Power Engineering*, Aug. 1999, [http://pepei.pennnet.com/articles/article\\_display.cfm?article\\_id=36230](http://pepei.pennnet.com/articles/article_display.cfm?article_id=36230) (visited Aug. 21, 2007), but if it were no more than would be necessary whenever a plant switched from a dirtier to a cleaner fuel the change would be the adoption of a “control technol-

ogy.” Otherwise “clean fuels” would be read out of the definition of such technology. At the other end of the spectrum is our nuclear hypothetical. The plant proposed in this case falls between that hypothetical example and the example of a plant that has alternative off-site sources of high- and low-sulfur coal respectively.

We hesitate in a borderline case, such as this, to pronounce the EPA’s decision arbitrary, the applicable standard for judicial review of its granting the permit. *Alaska Department of Environmental Conservation v. EPA*, 540 U.S. 461, 496-97 (2004). The decision required an expert judgment. The petitioners’ brief, though long, contains nothing about mine-mouth power stations. The petitioners pitch their case on the naked proposition that if a plant is capable—with redesign—of burning a clean fuel, it must undergo a “best available control technology” analysis. But they flinch by carving an exception for the nuclear case without explaining the principle that distinguishes it from this case. Of course there is a distinction, but it is one of degree and the treatment of differences of degree in a technically complex field with limited statutory guidance is entrusted to the judgment of the agency that administers the regulatory scheme rather than to courts of generalist judges. *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-43 (1984); *Sierra Club v. EPA*, 375 F.3d 537, 539-40 (7th Cir. 2004).

What must give us pause, however, is the scantiness of the Environmental Appeals Board’s discussion of the difference between, on the one hand, adopting a control technology, and, on the other hand, redesigning the proposed plant, in the specific setting of this case. Here are the critical passages: “With respect to alternate sources of coal, e.g., low-sulfur western coal from Wyoming or

Montana, the proposed plant is being designed and developed to burn high-sulfur Illinois coal, the locally available coal. It would be inconsistent with the scope of the project to use coal from other regions of the country. Rather, the BACT [best available control technology] determination addresses the appropriate control technology for SO<sub>2</sub> [sulfur dioxide] emissions associated with use of this coal at the proposed plant . . . . The project that must be addressed when evaluating BACT is the project for which an application has been submitted, i.e., a proposed mine-mouth power plant. The source of coal for which the plant would be developed is a specific reserve of 240 million tons of recoverable coal, which would meet the needs of the proposed plant for more than 30 years. Accordingly, the use of a particular coal supply is an inherent aspect of the proposed project. To require an evaluation of an alternative coal supply . . . would constitute a fundamental change to the project.' " *In re Prairie State Generating Co., supra*, slip op. at 20-21. Alternative coal supplies would be "beyond the scope of the project, a power plant fueled from coal delivered by a conveyor belt from an adjacent dedicated mine.' " *Id.* at 23. " "The development of a mine-mouth power plant is an intrinsic aspect of the proposed plant, which would be developed to use a specific reserve of fuel, which is adequate for the expected life of the plant.' . . . [C]onsideration of low-sulfur coal, because it necessarily involves a fuel source other than the co-located mine, would require Prairie State to redefine the fundamental purpose or basic design of its proposed Facility." *Id.* at 31, 36 (emphasis added).

These passages might be read as merging two separate issues: the difference between low-sulfur (clean) and high-sulfur (dirty) coal as a fuel source for a power plant, and

the difference between a plant co-located with a coal mine and a plant that obtains its coal from afar. The former is a difference in control technology, the latter a difference in design (or so the EPA can conclude). We think it is sufficiently clear from the passages that we have quoted from the Environmental Appeals Board's opinion, and especially from the clause that we italicized, that the Board did not confuse the two issues; that it granted the permit not because it thinks that *burning* low-sulfur coal would require the redesign of Prairie State's plant (it would not), but because *receiving* coal from a distant mine would require Prairie State to reconfigure the plant as one that is not co-located with a mine, and this reconfiguration would constitute a redesign.

So the Board's ruling on the BACT issue must be upheld, and we move on to the ozone issue. Measuring the contribution of a power plant to atmospheric ozone is difficult because the ozone is not emitted directly by the plant; rather, it is produced by the interaction of some of the chemicals that the plant emits with sunlight. Until 2003 the EPA determined that a power plant was violating the limit on contributing to ozone in the area in which Prairie State's plant is to be located when on at least one day there was an hour in which the average concentration of ozone exceeded .12 parts per million. But that year it decided to replace the "1 hour" standard as it was called with an "8 hour" standard. The new standard looks at whether the concentration of ozone during an average 8-hour period (more precisely, a three-year average of the fourth-highest daily maximum 8-hour concentration) exceeds .08 parts per million. The agency explained that "the 8-hour standard is more protective of public health and more stringent than the 1-hour standard, and there are



more areas that do not meet the 8-hour standard than there are areas that do not meet the 1-hour standard." "Proposed Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard," 68 Fed. Reg. 32,802, 32,804 (June 2, 2003) (to be codified at 40 C.F.R. Pt. 51).

The concentrations measured over these intervals are not actual measurements of ozone; they are estimates based on the levels of contributing factors, the chemicals and sunlight. The formula for estimating the average ozone concentration in one hour is not necessarily applicable to the 8-hour estimate, but the EPA has yet to adopt a formula for the latter estimate. So it used the 1-hour formula not only to show compliance with the 1-hour standard but also to generate an 8-hour estimate, and it used results from earlier studies of the St. Louis area to reinforce its conclusion. From both the 1-hour formula applied to 8-hour stretches and the earlier studies, the agency concluded that Prairie State's plant would not increase the amount of ozone in the local atmosphere. As best the agency could estimate, its 1-hour measurement would turn out to be *below* the limit of .08 parts per million that the EPA has set for the 8-hour limit.

This was a plausible expectation because, as a matter of arithmetic, the emissions in the highest hour of a measurement period have to be at least as great as the emissions averaged over the highest eight hours in that period. Suppose the emissions in the highest hour are 10 parts per million, in the next highest hour 9 parts per million, then 8 parts, 7, 6, 5, 4, and 3. The average would be 6.5, which would have to be lower than the amount in the highest hour (10) unless the emissions were the same in every hour, in which event the 1-hour and the 8-hour averages would be identical. Admittedly, the example oversimplifies

the case because different methods of averaging are used for the different standards. But an emissions level that satisfies the 1-hour standard is likely though not certain to satisfy the new standard as well even though the agency considers the latter to be more stringent.

The petitioners argue that the EPA simply cannot be permitted to rely on the 1-hour standard because it has been superseded by the 8-hour standard. It has; but pending adoption of a compliance measure tailored to the new standard, the agency was entitled to use the measure used for the older standard as a stopgap to demonstrate that if the plant complied with that measure it would be unlikely to violate the new standard. The petitioners do not suggest an alternative except to criticize the inference the agency drew from earlier studies. The criticisms have some merit but not enough to enable us to conclude that the agency was unreasonable in concluding that the plant is unlikely to increase the ozone level.

The petition for review is

DENIED.

A true Copy:

Teste:

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*Clerk of the United States Court of  
Appeals for the Seventh Circuit*