

In the
United States Court of Appeals
For the Seventh Circuit

Nos. 09-3344, 09-3350, 09-3351

UNITED STATES OF AMERICA,

*Plaintiff-Appellee/
Cross-Appellant,*

and

STATE OF NEW YORK, *et al.*,

*Plaintiffs-Intervenors-Appellees/
Cross-Appellants,*

v.

CINERGY CORPORATION, *et al.*,

*Defendants-Appellants/
Cross-Appellees.*

Appeals from the United States District Court
for the Southern District of Indiana, Indianapolis Division.
No. 1:99-CV-1693—**Larry J. McKinney**, *Judge*.

ARGUED SEPTEMBER 20, 2010—DECIDED OCTOBER 12, 2010

Before EASTERBROOK, *Chief Judge*, and POSNER and ROVNER, *Circuit Judges*.

POSNER, *Circuit Judge*. More than a decade ago the Environmental Protection Agency brought this suit against affiliated owners (we'll pretend they're a single entity, Cinergy) of a number of coal-fired electric power plants in the Midwest. The suit claims that Cinergy violated section 165(a) of the Clean Air Act, 42 U.S.C. § 7475(a), by modifying a number of the plants without first obtaining from the agency a permit that the agency contends was required by a regulation, 40 C.F.R. § 52.21(a)(2)(iii), because the modifications were "major" and would produce increases in emissions of nitrogen oxide and sulfur dioxide. No matter, Cinergy argued; the regulation does not require a permit for modifications unless they will increase the *hourly* rate at which a plant can emit pollutants, even if they will increase the plant's *annual* emissions by enabling the plant to be operated for more hours during the year. The district judge rejected Cinergy's interpretation. Without the required permit, Cinergy was liable for increased pollution caused by the modifications, and faced the prospect of an injunction that would require it to shut down the plants, plus civil penalties of \$25,000 for each day that it had violated the permit requirement. 42 U.S.C. §§ 7413(a), (b), (d)(1); *United States v. AM General Corp.*, 34 F.3d 472, 473-75 (7th Cir. 1994).

Cinergy took an interlocutory appeal under 28 U.S.C. § 1292(b) from the judge's ruling on the hourly-capacity versus actual-emissions interpretation of the

regulation. We affirmed the district court, agreeing that the regulation required application of the actual-emissions standard. *United States v. Cinergy Corp.*, 458 F.3d 705 (7th Cir. 2006). One point in our opinion is worth repeating because it bears on an issue in the present appeals. Cinergy's hourly-capacity interpretation would if adopted give a company that had a choice between making a physical modification that would increase the hourly emissions rate and one that would enable an increase in the number of hours of operation an incentive to make the latter modification even if that would produce a higher annual level of emissions. For that modification would elude the permit requirement and thus shelter the company from liability for the increased emissions. It would also distort the choice between rebuilding an old plant and replacing it with a new one. The Clean Air Act treats old plants more leniently than new ones because it is expensive to retrofit a plant with pollution-control equipment. *Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901, 909 (7th Cir. 1990). But there is an expectation that old plants will wear out and be replaced by new ones that will thus be subject to the more stringent pollution controls that the Act imposes on new plants. A spur to replacing an old plant is that aging produces more frequent breakdowns and so reduces a plant's hours of operation and hence its output unless the owner invests in continuous, and cumulatively costly, replacement of worn-out parts to keep the plant going. Cinergy's interpretation would if adopted have given the company an artificial incentive instead to renovate its old plants, and by so doing increase their hours of operation, rather than to replace

the plants even if replacing them would cost less. For by renovating the plants rather than replacing them, the company could increase their output without having to invest in measures for preventing the enhanced output from generating increased pollution.

After we decided the interlocutory appeal, the case resumed in the district court and went to trial before a jury—although a case of such complexity, rife with technical issues, is not an ideal one for a jury to decide. The jury’s verdict was mixed. Fourteen modification projects at three plants were at issue; the jury found liability with respect to four of the projects, all at Cinergy’s plant in Wabash, Indiana, and all undertaken between 1989 and 1992. These modifications, the jury found, had been likely to increase the plant’s annual emissions of sulphur dioxide and nitrogen oxide and therefore Cinergy should have sought a permit. (Actually the jury’s finding is limited to three of the generating units at the Wabash plant, but for simplicity we’ll treat the plant as the unit of analysis.)

Cinergy argues that so far as sulphur dioxide is concerned, no permit was required because the modifications did not increase the plants’ hourly-rate capacity to produce electricity and therefore, as a byproduct, sulphur dioxide. It points out that under Indiana’s plan for implementing the Clean Air Act that was in effect when the plants were modified and that the EPA had approved, hourly capacity rather than annual emissions determined whether a permit was required for a modification. Air Pollution Control Board of the State of Indi-

ana, *Codification of Air Pollution Control Board Regulations*, 325 Ind. Admin. Code §§ 1.1-1, 2.1 (1980); U.S. Environmental Protection Agency, *Approval and Promulgation of Implementation Plans: Indiana State*, 47 Fed. Reg. 6621-01 (Feb. 16, 1982). It is true that even before the EPA approved the plan, Indiana amended it to conform the definition of “modification” to the actual-emissions standard that later we upheld in our first (2006) opinion. 325 Ind. Admin. Code 2-3-1(l), (o) (1981). But it did not submit an amended plan, with the critical change, to the EPA for many years. When it finally did, see 326 Ind. Admin. Code 2-3-1 (1994), the EPA promptly approved it. *Approval and Promulgation of a New Source Review Implementation Plan; Indiana*, 59 Fed. Reg. 51,108-01 (Oct. 7, 1994). The modifications at issue in the first appeal postdated that approval. The present appeals, however, concern modifications made several years earlier and therefore governed by the state plan that the EPA had approved in 1982.

Section 43 of that plan defined “modification,” so far as bears on this case, as “an addition to an existing facility or any physical change, or change in the method of operation of any facility which increases the potential . . . emissions . . . of any pollutant that could be emitted from the facility.” 325 Ind. Admin. Code § 1.1-1, p. 5 (1980). Cinergy contends that “increases the potential . . . emissions . . . that could be emitted from the facility” means increases the hourly rate at which the plant can, by generating more electricity, emit more pollution: a measure of capacity. That is the natural

interpretation, the key words being “could be.” To read them as modifying “pollutant” (“any pollutant which could be emitted from the facility”) would not make sense because reference to *increased* emissions presupposes that the plant already emits the pollutant in question.

And whether Cinergy’s interpretation is correct or not, the EPA does not argue that section 43 can be read to define a modification as a change that increases only annual emissions. Rather, it argues that read as Cinergy reads it section 43 is unlawful because the statute and implementing regulation (as we said in our first opinion) define modification in terms of increasing actual emissions rather than hourly capacity. The agency adds that, bowing to the D.C. Circuit’s decision in *Alabama Power Co. v. Costle*, 636 F.2d 323, 400 (D.C. Cir. 1979), it had made clear, even *before* section 43 was adopted and approved by it as part of its approval of Indiana’s plan, that the statute and regulation required use of the actual-emissions standard. *Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans*, 45 Fed. Reg. 52676, 52700 (Aug. 7, 1980). And it had noted that Indiana had agreed (in the 1981 amendment to its plan, noted above) to update its definitions to conform to the EPA’s new interpretation and that the EPA had said it would “rulemake on these revised [state] regulations . . . upon their submittal.” *Approval and Promulgation of Implementation Plans: Indiana*, 46 Fed. Reg. 54,941-01, 59,942 (Nov. 5, 1981). So, says the EPA, Cinergy was “on notice” that section 43 did not mean what it said.

The district court bought this argument. But it's untenable. The Clean Air Act does not authorize the imposition of sanctions for conduct that complies with a State Implementation Plan that the EPA has approved. See 42 U.S.C. § 7413(a)(1). The EPA approved Indiana's plan with exceptions that did not include Section 43, thinking that Indiana would submit a revised plan which the EPA would then approve. Which is what happened—only it took 12 years.

So what was Cinergy "on notice" of? It was on notice that a straightforward reading of section 43 permitted the company without fear of sanctions to make modifications without a permit as long as they would not increase a plant's potential generating capacity, even if it would increase its annual output by enabling it to be operated for more hours without having to be shut down for repairs and component replacements. Cinergy was also on notice that section 43 would be replaced by the "actual emissions" standard, which the EPA would then approve as part of an amended state plan and with which Cinergy would have to comply with respect to any modifications it made after that approval took effect, which did not happen however until 1994; and it was the plan approved in 1994 that we considered in the first appeal. What Cinergy was not on notice of was that the EPA would treat approval of section 43 as rejection of it.

The agency's frustration is understandable. It embraced the actual-emissions standard, which for the reasons explained in our previous opinion and repeated earlier in this one makes better economic sense, before sec-

tion 43 was presented for its approval. It should have disapproved it; it didn't; but it can't impose the good standard on a plant that implemented the bad when the bad one was authorized by a state implementation plan that the EPA had approved. The blunder was unfortunate but the agency must live with it.

The judgment of the district court must therefore be reversed so far as the sulphur dioxide emissions are concerned. With respect to the emissions of nitrogen oxide, the parties agree that the actual-emissions standard controls, and the only question we need answer is whether the district court was right to allow the EPA's expert witnesses to testify that the modifications made would result in an increase in annual emissions beyond what the state implementation plan permitted. ("Would," not "did," because the permit must be obtained before the modification is made, and so the effect on emissions is a prediction rather than an observation.) The district judge held a pretrial hearing on whether to allow their testimony, and then issued a two-sentence order saying they could testify, as they did.

Cinergy throws sand in our eyes by making trivial objections to the judge's ruling, such as that the experts met with the EPA's staff to discuss their testimony and receive suggestions (as if that weren't routine and proper) and that the experts' methodology was not "peer reviewed" (they are not academics). The two experts—one a physicist (Richard Rosen), the other an engineer (Robert Koppe)—have the requisite training and experience to estimate the effect of modifying an electric

power plant on the amount of electricity generated by it. And once the effect on the amount generated is determined, predicting the amount of pollution that will result from the increased generation is straightforward.

The main problem with the proposed testimony was that the formula that the two experts proposed to use for their forecast was one designed for use with baseload electric generating plants. Because the demand for electricity varies with the day, the time of day, the season, the weather, and other changeable conditions, and because Cinergy did not have the means to store energy from its generating stations, Cinergy like most electric power companies needed not only enough generating capacity to meet the average foreseeable demand but also standby capacity so that it could vary its output with demand and thus avoid generating electricity for which there was no market.

Optimizing output is usually achieved by operating at full capacity the plants that are cheapest to operate, to supply the baseload (the minimum required at all times), and by using the plants that are more costly to operate to meet surges in demand. "Utilities operate power generation equipment in three general ways: baseload, cycling, and peaking. Baseload equipment is operated virtually continuously; such operation results in a low cost per kilowatt hour. Cycling equipment is operated on a regular or fairly regular basis, but not continuously, because of its higher per kilowatt hour cost. For example, such equipment might be needed daily during hours of high demand and then shut down at

night. Peaking equipment is generally used only during hours of maximum demand." *Babcock & Wilcox Co. v. United Technologies Corp.*, 435 F. Supp. 1249, 1256 (N.D. Ohio 1977); see also *Northern Indiana Public Service Co. v. Colorado Westmoreland, Inc.*, 667 F. Supp. 613, 629 (N.D. Ind. 1987); Stephen Breyer & Paul MacAvoy, *Energy Regulation by the Federal Power Commission* 91 (Brookings Institution 1974). So, for example, "plants that provide peaking power during times of high demand are built to minimize capital investment, and high operating costs are accepted because these plants have low utilization." Arnold W. Reitze, Jr., "Electric Power in a Carbon Constrained World," 34 *William & Mary Environmental L. & Policy Rev.* 821, 850-51 (2010). In this way total costs are minimized.

Cinergy's Wabash plant is old; old plants are more costly to operate than new ones; the Wabash plant is therefore operated as a cycling rather than a baseload plant and so does not operate at full capacity. There can be no presumption that an increase in its annual capacity would result in a proportionately equal increase in its output. Suppose a modification increased the plant's annual electrical generating capacity by 10 percent, but because of limited predicted use of standby capacity the output of the modified plant was unlikely to increase at all (just not to fall), and therefore its emission of pollutants was unlikely to increase. In contrast, if a baseload plant is modified to enable it to produce more electricity, there is a presumption that it will produce at the higher rate enabled by the modification, because baseload plants

are designed to be run at or near full capacity. K.D. Lee & D.A. McCutchan, "What Is the Worth of Baseload Availability?," 26 *Engineering Economist* 137, 138 (1981).

And there's the rub. The formula that the EPA's experts used predicts that the effect of the modifications on generation would be proportionately equal to the increase in annual capacity. If capacity increased by 10 percent, generation would increase by 10 percent. The formula doesn't work for a cycling facility. Other methods are used for predicting increased generation from increased standby capacity, but they are not the methods used by the EPA's experts. Their evidence should not have been admitted.

In fairness to the district judge, we note that Cinergy didn't argue this point to him with any clarity; this is a common pitfall in a scattershot approach to litigation. The point isn't even clear in Cinergy's appeal briefs. Cinergy did, however, at least mention the point in the district court and in its briefs and oral argument in this court, and the government doesn't argue that it has been forfeited. Cinergy had attached to its motion in the district court to exclude the testimony of the government's experts the report of its own expert, which criticizes the application of the proportionate-equality model to a "low utilization," which is to say a non-baseload, plant. The report correctly identified the Wabash plant as being a low-utilization plant and stated "that the new utilization factor statistic that [the government's experts] create for these low load factor units . . . has no place in generation planning models or

calculations If Dr. Rosen's [one of the government's experts] analysis was correct, replacing these [parts] would mean a 75% increase in generation at this unit alone. Experience tells me that cannot be the case, given the load factor and dispatch ranking of this unit."

Without expert testimony to support an estimate of actual emissions caused by the modifications, the government cannot prevail with respect to the charge of nitrogen oxide pollution; for the government doesn't contest Cinergy's claim that if the testimony of the government's experts should have been excluded, Cinergy is entitled to judgment. Earlier we said that the government cannot prevail with respect to the plant's emissions of sulphur dioxide. Therefore the judgment must be reversed with instructions to enter judgment for Cinergy.

The parties have made other arguments, but they are either too feeble to merit discussion (such as the government's argument that we decided the present appeal, without knowing it, in our previous opinion) or academic in light of our analysis. Also academic is the government's cross-appeal, which challenges a ruling by the district judge on the statute of limitations applicable to the government's claim of civil penalties. The cross-appeal is therefore dismissed, while the judgment in the government's favor is, as we said,

REVERSED.