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*United States Court of Appeals
for the Second Circuit*

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Petitioners,

-against-

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, MICHAEL LEAVITT, IN HIS OFFICIAL CAPACITY AS ADMINISTRATOR OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Respondents

**ON PETITION FOR REVIEW OF FINAL ACTION OF THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**BRIEF OF *AMICUS CURIAE* HEALTHLINK, *ET AL.*
IN SUPPORT OF ENVIRONMENTAL PETITIONERS**

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Filed: July 26, 2005

CORPORATE DISCLOSURE STATEMENT

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure, HealthLink, Kentucky Resources Council, New England Clean Water Action, The Ohio Environmental Council, and the Ohio Valley Environmental Council (collectively, “Environmental Amici”) state that they are all non-profit environmental organizations. None of the Environmental Amici has a parent corporation, subsidiary, or affiliate that has issued shares or debt securities to the public.

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**CONCISE STATEMENT OF IDENTITY AND INTEREST
OF AMICI CURIAE**

Amici curiae HealthLink, Kentucky Resources Council, New England Clean Water Action, The Ohio Environmental Council, and the Ohio Valley Environmental Council (collectively, “Environmental Amici”) are all non-profit environmental and/or public health organizations working to improve public health and environmental quality by achieving reductions in air and water pollution. Environmental Amici advocate on behalf of their thousands of members and contributors throughout the United States, *inter alia*, to reduce the significant environmental impacts of fossil fuel-fired power plants that are subject to the EPA regulation under review in this case.

STATEMENT OF THE CASE

This brief adopts and relies on the Statement of the Case in the Brief of Environmental Petitioners (Riverkeeper, Inc., *et al.*) dated July 6, 2005 (“Env. Pet. Br.”).

ARGUMENT

Environmental Amici agree with Environmental Petitioners that EPA's failure in its Phase II Cooling Water Intake Structures Rule ("Phase II Rule")¹ to require existing power plants to use closed-cycle cooling technology for cooling water intake structures violates Section 316(b) of the Clean Water Act ("CWA"), which requires that such structures reflect the "best technology available for minimizing adverse environmental impact" ("BTA"). EPA's rationale for providing compliance options that are less environmentally-protective than closed-cycle cooling contradicts the plain language of Section 316(b), is arbitrary and capricious, and is unsupported by the record in this proceeding. As the Environmental Petitioners demonstrate in their brief, the Phase II rule should be vacated and remanded to EPA for the following reasons: EPA illegally focused on maximizing net monetary benefits, rather than minimizing adverse environmental impact, when it established the BTA, *Env. Pet. Br.* at 28; EPA illegally allowed the use of restoration measures to comply with Section 316(b), *id.* at 49; EPA illegally allowed regulatory authorities to make site-specific determinations of BTA based on attempted comparisons between the cost of a technology and the "monetized" environmental benefits expected to result from its implementation, *id.* at 73; EPA

¹ "National Pollutant Discharge Elimination System: Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities," 69 Fed. Reg. 41576 (July 9, 2004).

illegally allows for site-specific determinations of BTA if compliance costs projected by facility owners exceed those anticipated by EPA, *id.* at 96; and EPA illegally characterized new “stand-alone facilities” as “existing facilities,” thereby allowing them to use intake technologies that are less protective of the environment, *id.* at 105.

In this brief, Environmental Amici further assert that EPA’s Phase II rule is arbitrary, capricious, and otherwise unlawful because its rejection of closed-cycle cooling as BTA is based in part on unsupported concerns about the “energy impacts” associated with that technology. This issue is addressed below.

I. EPA Unlawfully Rejected Closed-Cycle Cooling as the Best Technology Available for Minimizing Adverse Environmental Impact on the Basis of Unsupported Concerns About Energy Impacts.

In its Phase II Rule, EPA rejected two regulatory options that would have established performance standards commensurate with closed-cycle cooling as BTA. The first rejected option would have required all existing power plants subject to the rule (“Phase II facilities”) to install closed-cycle cooling or some other functionally equivalent technology; the second would have required Phase II facilities located on “sensitive waterbodies”² to meet that standard. EPA’s

² *E.g.*, oceans, estuaries, and tidal rivers. *See* 69 Fed. Reg. at 41606/2.

rejection of these options on the basis of their “energy impacts” is arbitrary and capricious and an abuse of its discretion.

A. EPA’s Analysis of the Energy Impacts Associated with Closed-Cycle Cooling is Arbitrary and Capricious Because it Relies on Admittedly Flawed Projections About the Energy Sector.

EPA’s proposed Phase II Rule attempted to describe the various facility- and market-level impacts that could be expected if the Agency were to select closed-cycle cooling as BTA. EPA stated that 6560 MW of electric generating capacity would be shut down by 2013 if closed-cycle cooling was mandated at all Phase II facilities. 67 Fed. Reg. 17121, 17188 (Exhibit 13) (April 9, 2002). The Agency also warned of rising production costs and energy costs, as well as an increase in the “capacity price,” which EPA defines as the price paid to a power plant for making unloaded capacity available as reserves to ensure the reliability of the country’s electric generating system. *Id.* at 17186/2-3, 17188. EPA projected that the energy market would be comparably impacted if it adopted closed-cycle cooling as BTA at facilities located on sensitive waterbodies. *See id.* at 17185-87. In developing these projections, EPA relied extensively upon IPM 2000, a computer model of the domestic electric power market that simulates how power generators are likely to respond over time to various “user-specified constraints” such as new environmental regulations. *Id.* at 17181/3.

In comments submitted to EPA in 2002 and 2003, Environmental Amici and other citizen groups pointed out that even assuming the IPM projections were valid, the lost generating capacity that could be attributed to a rule that set closed-cycle cooling as BTA would come to less than one percent of the total national generating capacity in 2013. *See* Response to Public Comment 316bEFR.061.014 at 1944; *id.* 316bEFR.329.003 at 4412. They also reminded EPA that elsewhere in the rule it had characterized relatively larger capacity closures as “insignificant.”³ *See id.* (referencing 67 Fed. Reg. at 17186/1).

Furthermore, Environmental Amici and the other commenters demonstrated that the Agency’s projections based on IPM 2000 were unsound due to a critical flaw in the model. Specifically, the commenters noted that when the IPM 2000 began its modeling run in 2000, the full scale of the current surge in power plant development was not yet apparent. As a result, the model significantly underestimated the amount of new electric generating capacity that would be built in 2000-2013. *See id.* 316bEFR.061.015 at 1946. Environmental Amici presented EPA with a conservative reanalysis of development in the energy sector that took into account the current boom in energy development. The reanalysis found that the amount of generating capacity added between 2000 and 2006 would exceed

³ In its description of the market impacts that could result if it were to establish closed-cycle cooling as BTA for power plants located on sensitive waterbodies, EPA indicated that capacity closures of 1.1% in the Northeast and 1.3% in the West would “represent an insignificant percentage of total baseline capacity in [those] regions.” 67 Fed. Reg. at 17186/1.

IPM 2000's projected total capacity additions *through 2013* by 95,000 MW. *Id.* at 1947.

Consequently, even the negligible market impacts cited in the proposed rule were inadvertently exaggerated by EPA because the Agency compared expected losses in generating capacity against national capacity projections that were unrealistically low. When viewed in the context of the enormous investments being made in new power generation, it became evident that a closed-cycle cooling rule would not appreciably affect the reliable supply of energy in the United States. *Id.* 316bEFR.061.008 at 1934, 316b.061.015 at 1947.

EPA acknowledged that its market projections had been based on a flawed model when it issued the final Phase II rule. *Id.* 316bEFR.061.001 at 1927 (“EPA agrees that more recent capacity developments exceed the estimates embedded in the IPM.”). In light of that acknowledgement, EPA cannot and does not provide a rational basis for its assertion elsewhere that it “disagrees with the statement that its analysis of market-level impacts overstated [the] economic consequences of the all cooling tower option.” *Id.* 316bEFR.061.008 at 1934. Moreover, in its recitation of negative “energy impacts” – including “supply disruptions” – that purportedly contributed to its rejection of closed-cycle cooling as BTA, EPA repeats the mistake it made in its proposed rule by failing to account for the abundance of new and projected generating capacity. *See* 69 Fed. Reg. at 41605-

07. Instead, it inexplicably relies on the same faulty analyses it conducted in support of the proposed rule. *See id.* at 41604/3 (“the costs and benefits presented [in the portion of the Phase II rule preamble that explains EPA’s rejection of closed-cycle cooling] are those developed at proposal”); EPA, Economics and Benefits Analysis for the Final Section 316(b) Phase II Existing Facilities Rule at B3-1 (February 2004) (stating that EPA used IPM 2000 to conduct economic analyses in support of the Phase II rule); *id.* at A1-1 (relying on market-impact analyses of the closed-cycle rule and other alternatives that were conducted in support of the proposed rule).

EPA’s failure to account for the substantial flaw in its market projection model is arbitrary and capricious. *See Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 922 (D.C. Cir. 1998) (finding rule to be arbitrary and capricious where “EPA knows key assumptions underlying [its predictive model] are wrong and yet has offered no defense of its continued reliance on it.”). Because IPM 2000 underestimated the total national generating capacity that will exist at the time the Phase II rule is implemented, EPA overestimated the impacts that a closed-cycle cooling rule would have on energy supply. Environmental Amici and other commenters brought this error to EPA’s attention in 2002 and 2003. Having acknowledged that its computer model is flawed, EPA’s continued reliance on the model in promulgating the final Phase II rule is arbitrary and capricious, and an

abuse of its discretion. *See Eagle-Picher Indus., Inc. v. EPA*, 759 F.2d 905, 921(D.C. Cir. 1985) (requiring agency to explain assumptions and methodology and, if methodology is challenged, to provide a complete analytic defense); *United States Air Tour Assn. v. FAA*, 298 F.3d 997, 1008 (D.C. Cir. 2002) (same).

B. EPA's Failure to Conduct a Rational Comparison of the Environmental Costs and Benefits Associated with Different Cooling Systems Renders its Rule Arbitrary and Capricious.

The “energy impact” that ultimately receives the most attention in the preamble to the Phase II rule is the possibility of increased air pollution, *see* 69 Fed. Reg. at 41605/3, even though the Department of Energy found that the “the incremental air emissions” from the installation of closed-cycle cooling “are not large on a percentage basis (generally less than one percent).” Response to Public Comment 316bEFR.010.103 at 261. While any increase in air pollution is of significant concern to Environmental Amici and their members, EPA has failed to demonstrate the potential harm to air quality from closed-cycle cooling is substantial enough to justify the Agency’s decision to forego the additional water-related benefits that would stem from a closed-cycle cooling rule.

Pursuant to Section 316(b), EPA must “require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.” CWA

§316(b), 33 U.S.C. §1326(b). The main adverse environmental impacts caused by cooling water intake structures are, indisputably, impingement (organisms trapped against intake structures can suffer from exhaustion or asphyxiation) and entrainment (organisms pulled into the cooling system face an array of mechanical, thermal, and toxic shocks). *See* 67 Fed. Reg. at 17136/1 (“The *majority of environmental impacts* associated with intake structures are caused by water withdrawals that ultimately result in aquatic organism losses.”) (emphasis added). Impingement and entrainment levels are closely linked to the amount of cooling water a facility withdraws; accordingly, the most effective and most certain way of reducing impingement and entrainment is to limit intake capacity. *See* 66 Fed. Reg. 65255, 65273/2 (December 18, 2001). By requiring power plants to limit the amount of cooling water they use, a rule that establishes closed-cycle cooling as BTA could reduce impingement and entrainment by 96-98% as compared to once-through cooling systems. *Id.* at 65273/3. In contrast, EPA’s Phase II rule requires facilities to reduce impingement mortality by only 80% and entrainment by only 60%. 69 Fed. Reg. at 41590/2-3. The rule’s performance standards are lenient enough that power plants can comply without limiting their intake of cooling water, relying instead on wedgewire screens and other measures unrelated to intake capacity. *Id.* at 41591. As a result, more organisms will be impinged and

entrained at existing power plants under the Phase II rule than would otherwise be the case under a closed-cycle cooling rule.

In defense of its rule, EPA points out that the installation of closed-cycle cooling can make a power plant slightly less efficient, meaning that more fuel must be consumed to generate the same amount of electricity. The increased fuel consumption can result in additional air emissions. 69 Fed. Reg. at 41605/3. As an initial point, it is worth noting that the Department of Energy found that the “widespread installation” of closed-cycle cooling systems at coal-fired power plants “would likely not impact the ability [of] the electric generation sector to meet more stringent air emission caps.” Response to Public Comment 316bEFR.010.103 at 257. Assuming *arguendo*, however, that adverse air impacts would be worse under a closed-cycle cooling rule than under the Agency’s Phase II rule, those additional impacts do not support EPA’s conclusion that its Phase II rule requires power plants to use “the best technology available for minimizing adverse environmental impact.”

Although it is reasonable for EPA to consider non-water environmental impacts in establishing BTA, the agency failed to rationally compare the relative degree by which the various cooling technologies will reduce the *overall* environmental impact of cooling systems. Instead, EPA focused on relative air emissions, almost to the exclusion of other environmental harms. In order to

determine which regulatory option will best minimize the adverse environmental impacts of cooling water intake systems, EPA must compare the full set of impacts associated with each option. *New York Cross Harbor R.R. v. Surface Transp. Bd.*, 374 F.3d 1171, 1181 (D.C. Cir 2004) (finding that an agency acts arbitrarily and capriciously “if it fails to consider[] *all* the relevant factors in reaching its decision.”) (emphasis added, internal citations and quotations removed).

Moreover, given that Congress crafted Section 316(b) to help “restore and maintain the chemical, physical, and biological integrity of the Nation’s water,” CWA §101(a), 33 U.S.C. §1251(a), EPA has a special obligation to justify its decision to reject the technology that has proven most effective at minimizing *water-related* environmental harm.

Agency interpretations are entitled to deference when the underlying statute requires various factors to be balanced, but no deference is warranted where – as here – the agency neglects to provide a rational explanation for *how* it balanced those factors, or even *if* it balanced those factors. *See Bluewater Network v. EPA*, 370 F.3d 1, 21-22 (D.C. Cir. 2004). EPA’s failure to “to explain the rationale and factual basis” behind its rejection of closed-cycle cooling as BTA for some or all Phase II facilities renders its rule arbitrary and capricious and an abuse of agency discretion. *See Bowen v. American Hospital Assn.*, 476 U.S. 610, 627 (1986); *see also Transactive Corp. v. United States*, 91 F.3d 232 (D.C. Cir. 1996) (“In order to

ensure that an agency's decision has not been arbitrary, we require the agency to have identified and explained the reasoned basis for its decision.”).

CONCLUSION

For the foregoing reasons, the Environmental Amici respectfully requests that this Court vacate the Phase II rule and remand it EPA.

Dated: July 25, 2005

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CERTIFICATE OF COMPLIANCE WITH WORD LIMITATION

Pursuant to Federal Rules of Appellate Procedure 29(d) and 32(a)(7), I hereby certify that the foregoing brief contains 2424 words as counted by Microsoft Word, and that this does not exceed the number of words authorized by those rules.

Jonathan F. Lewis

CERTIFICATE OF SERVICE

I hereby certify that on this 25th day of July, 2005, true and correct copies of the foregoing **BRIEF OF THE ENVIRONMENTAL AMICI** were served on the following counsel for the parties in the manner indicated:

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